

TECHNICAL DATA SHEET

Thermal insulating and anti-mould ceramic nano plaster

Characteristics and use: An innovative thin-layer thermal insulating and anti-mould plaster with ceramic nanoparticles, designed for maximum savings on the costs of heating and cooling buildings. Already with a single layer 3–4 mm thick it provides excellent thermal insulating properties. At the same time it disinfects the surfaces of walls and ceilings and effectively prevents the formation of mould. It creates a very hard and extremely resistant surface.

If required, up to 3 layers can be applied for an even higher insulating effect. The plaster is suitable for application to any levelled substrate – masonry, concrete, plasterboard, OSB boards, wood and metal. An ideal solution not only for modern buildings, but also for old stone buildings (but the masonry must be dry).

Preparation of the substrate and application of the thermal insulating plaster: The substrate must be dry, firm, load-bearing and free of all impurities, grease, old non-cohesive coatings and dust particles. The maturity of the substrate is crucial; the residual moisture should not exceed 4% (by weight). If mould occurs on the surface, it must first be removed with a suitable disinfectant (e.g. SAVO). Then apply a priming coat suitable for the given substrate and let it dry thoroughly.

Before application, mix the plaster thoroughly with a mixing whisk so that it acquires a homogeneous consistency. Then apply evenly a layer 3–4 mm thick to the cohesive substrate using a stainless steel or plastic notched trowel (comb). 1.5–2 hours after application, lightly smooth the surface with a rubber float. After finishing the work, wash the working tools immediately with water so that they are not damaged.

Drying time and further layers:

- Drying of one layer: 6–8 hours (at 21 °C and 60% relative humidity). A lower temperature and higher humidity may extend the drying.
- A further layer can be applied only after 2 days, when the substrate is completely dry. Usually, however, one layer is entirely sufficient.

Tip for a stored product: If the plaster hardens slightly during storage, add a small amount of water and mix thoroughly until it acquires a creamy consistency.

Application conditions: Do not apply the plaster at substrate and air temperatures lower than +5 °C or higher than +30 °C, nor at relative air humidity above 70%.

Coverage of a 12 kg package: 10–12 m² depending on the thickness of the applied layer, the structure and the characteristics of the substrate.

Recommendation for enhancing the effect: After the plaster has dried, we recommend applying the THERMOSHIELD REFLEX PREMIUM thermal insulating coating. This will significantly enhance the thermal insulating and anti-mould properties of the treated wall or ceiling.

Storage and disposal: The contents of the package are non-flammable. Store at temperatures of +5 °C to +25 °C and protect from frost, sunlight and radiant heat. The product retains its functional properties for a period of 24 months from the date of manufacture in the original unopened packaging. Keep used contents in a tightly closed container for a maximum period of 6 months. Do not dispose of plaster residues together with municipal waste, do not pour them into the sewerage system or onto the ground. Dispose of as construction waste. Cleaned packaging can be recycled.

Occupational safety and health protection: Keep out of the reach of children. In case of contact with the eyes, rinse them immediately with clean water and seek medical assistance. When using, do not eat, drink or smoke. Use suitable protective clothing and gloves. Wash affected skin with water and soap and treat it with a regenerating cream. The product contains 5-chloro-2-methyl-4-isothiazolin-3-one [No. 247-500-7] / 2-methyl-2H-isothiazol-3-one [No. 220-239-6] (3:1), 1,2-benzisothiazol-3(2H)-one, OCTENE and hydroformylation products. May cause an allergic reaction.

Pursuant to Directive 2004/42/EC of the European Parliament and of the Council and Decree of the Ministry of the Environment of the Czech Republic (Vyhláška MŽP ČR) No. 127/2011 Coll., the limit value of the VOC content for this product (cat. A/a) is max. 30 g/l. The VOC content in this product is a maximum of 30 g/l VOC and VR (water-borne): 30 g/l, in the state ready for application. See the original instructions on the packaging.

UFI: CYHS-CMR2-HROU-U415

Toxicological Information Centre (Toxikologické informační středisko): Clinic of Occupational Medicine of the General University Hospital in Prague (24-hour service) +420 224 91 92 93, 224 915 402, line 112

EU and IT standards: The product complies with the EN ISO 13786 standard. The product complies with Regulation (EU) No. 305/2011 of the European Parliament and of the Council of 9 March 2011 and with Legislative Decree 106/2017. Pursuant to Regulation 305/2011 (EU), the thermal insulating nano plaster bears the DOP and CE marking, and furthermore laboratory certification pursuant to the Ministerial Decree of 2/4/1998 and the CAM certificate pursuant to the Ministerial Decree of 17/11/2017, referred to by DR 34/2020 converted into Act No. 177/2020, and it meets all the basic requirements stated by ENEA in the note of 2 December 2020 for obtaining tax and subsidy advantages in connection with energy savings.

NORMATIVE CLASSIFICATION

The product is classified as a plaster in paste form pursuant to the EN 998-1:2016 standard, where it is designated as:

- T1 – thermal insulating plaster
- Suitable for walls, ceilings and partitions
- For interior and exterior

PHYSICAL AND THERMAL TECHNICAL PROPERTIES

Property	Value
Thermal conductivity λ (design)	0.001 W/m·K (internal), 0.003 W/m·K (external)
Certified λ (measurement at 40 °C)	0.00054–0.0021 W/m·K
Thermal shift at a 3.5 mm layer	up to 3.5 hours (at > 40 °C)
Specific heat capacity (cp)	approx. 1,493–2,089 J/kg·K
Diffusivity (a)	5.28×10^{-10} to 2.88×10^{-9} m ² /s
Applied thickness	3.5 mm

MEASUREMENT METHODOLOGY

- Tested by independent laboratories (CMR, Innovhub, Certimac)
- Use of the transfer matrix method pursuant to EN ISO 13786:2007
- λ values increased by more than 40% for design purposes in accordance with UNI 10456

ELIGIBILITY AND CONFORMITY pursuant to EU directives

The product meets all legislative requirements for energy renovations and subsidy schemes:

- DOP (Declaration of Performance) pursuant to EU Regulation No. 305/2011
- CE marking
- Certification pursuant to D.M. 2/4/1998
- CAM certificate pursuant to D.M. 17/11/2017

- It is in compliance with the requirements of ENEA for granting tax relief and subsidy schemes for reducing the energy performance demands of buildings

Certifications:

- CMR laboratory (test report No. 1851-2-20)
- Innovhub – specific heat
- Certimac – bulk density
- Calculations in accordance with the UNI EN ISO 13786 standard

PRACTICAL USE

Application	Advantages
Interior application	Ideal for heritage buildings and spaces where it is not possible to interfere with the façade, and at the same time an increase in thermal comfort without reducing the size of the usable floor area
Exterior application	In winter a reduction of heat losses and in summer the reflection of solar radiation and minimisation of the overheating of building interiors
Renovations / New buildings	Minimum thickness and low weight loading of the building structure

Use:

- External thermal insulation of façades
- Internal thermal insulation, remediation of thermal bridges
- Ideal for renovations as well as new buildings
- Reduces heat losses and in the summer period prevents excessive overheating of buildings

Properties	Value / Description
Thermal conductivity (λ)	Tested in the laboratory – value: 0.049 W/m·K. After drying: 0.039 W/m·K
Diffusion resistance (μ)	$\mu = 400$
Water vapour diffusion resistance	$S_d = 0.04 \text{ m}$
Reaction to fire (EN 13501-1)	Euroclass E
Dry bulk density	approx. $0.7 \text{ g/cm}^3 \pm 10\%$
Density of the wet mixture	approx. $1.75 \text{ kg/l} \pm 10\%$
Adhesion (EN 1542)	$\geq 0.5 \text{ MPa}$ (to a concrete substrate)
Water absorption index (EN 1062-3)	W2 – medium absorption
pH	7–8
Drying time between layers	min. 24 hours at 18°C
Appearance	Mass of paste consistency, natural white colour
Application	Painter's spatula / notched trowel (comb)