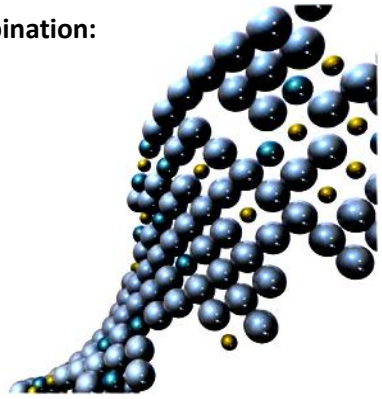
Nanotechnological liquid insulation NANOTER

NANOTER - a coating material whose thermophysical properties exceed known analogs.

The NANOTER coating (hereinafter also referred to as the product) consists of modern environmentally friendly polymeric nanomaterial forms supporting a flexible structure of microspheres formed from ceramic and glass in vacuum.

NANOTER is used in different versions, either separately or in combination:



1. as thermal insulation:

   - on facades and interior walls of buildings;
   - on foundations and plinths;
   - on roofs - in both the lower and upper layers;
   - on oil, gas, water, steam and other pipelines;
   - on containers with different uses;
   - on ventilation and cooling systems;
   - on metal structures;
   - in cargo vehicles and transportation supplies – air planes, cars, ships, train wagons.

2. for the prevention and control of corrosion of various metals;

3. as waterproofing on the external and internal surfaces of buildings and structures, incl.: roof, basement, pools;

4. for the protection of buildings and structures (incl., ventilation, pipelines, tanks) against environmental impacts:
   - mold and plant organisms;
   - UV radiation
   - solar heat radiation;
   - chemical and mineral pollution;
   - humidity.

5. to protect buildings and communications against condensation;

6. as insulation materials for means of transport (railway vehicles, cars, ships, planes etc.) against various environmental impacts;

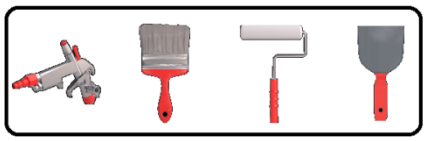
7. in-side rooms where noise and quality of air fluctuate widely – nanotechnological insulation NANOTER gives noise insulation and supports the clean air effects.

As a coating material, NANOTER acts as a heat insulator at lower ambient temperatures, as a heat insulator, and a heat reflector at high temperatures (solar radiation in the range of 70 to 95 %). The product is very resistant to UV radiation.

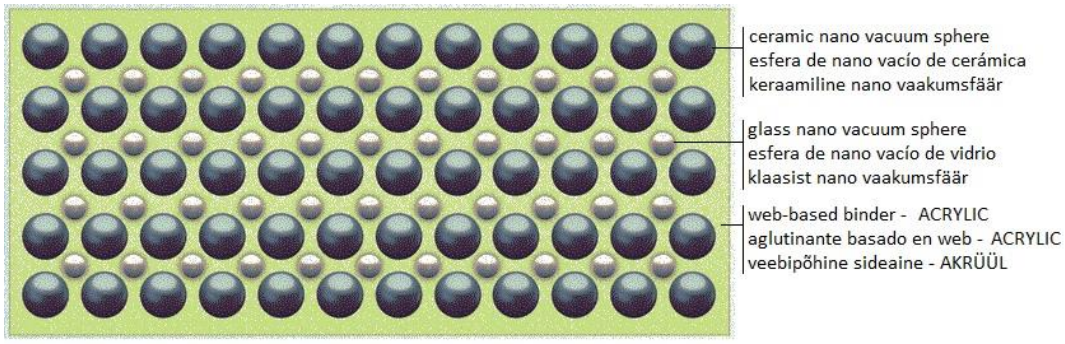
NANOTER water base products, depending on the additives, can withstand temperatures between – - 60 °C and + 150 °C (short-time + 200 °C).

NANOTER coatings are ready-to-use, odorless, non-toxic, with good adhesion, white, semi-matt, tintable (RAL) in light tones.

NANOTER products are water-based acrylic dispersions that can be applied to any surface with an adhesive comb and putty knife, roller, brush, or airless sprayer (high-pressure spray machine), depending on the properties of the product. The products are soluble in water and are safe *(see safety data sheet for details).*



After drying, an elastic coating is formed, which has unique insulating properties (prevention of heat loss, protection against freezing) compared to commonly used insulations. For example, a 1 mm layer of NANOTER with thermal insulation properties replaces a 35-40 mm layer of mineral wool. The uniqueness of the insulating properties is due to the arrangement of nanomaterial polymers in the structure formed by microspheres. The service life of thermal insulation under normal conditions of use is up to 15 years.



Nanotechnological liquide insulation NANOTER

Dust, dirt, pollen and other common airborne contaminants gain positive electric energy, which prompts electrostatic adhesion to walls and ceilings. Electrostatic propensity of NANOTER is 0.0 prevents dirt adhering to surfaces, while its ionized moisture, reducing the amount of impurities floating in the room environment.

The chemical composition of the NANOTER coating varies depending on the application properties of microsphere-based alkyl copolymers (base material), nanomaterial fillers and binders, technological auxiliary components, and pigments.

In addition to the physical and chemical properties of NANOTER coatings, which improve the properties of the coated surface and its structures, the surface remains decorative after coating.

LOW BREATHABLE THERMAL INSULATIONS

❖ Universal thermal insulation NANOTER BASIC

suitable for all indoor and outdoor surfaces (various metals, concrete and other mineral surfaces, also wood, plastic) in environments in the temperature range -60 °C to +150 °C (short-term up to 200 °C).

In addition to thermal properties, **NANOTER BASIC** is resistant to weather and UV radiation, moisture-repellent, fire-safe and the finished surface is decorative.

Consumption for 1 mm layer 1 l/m^2. Recommended layer thickness 1 to 2.5 mm, covered in layers.
Fire retardant properties of the material : **B S1 d0**.
Noise cancellation depending on frequency : **10 to 20 dB**

The universal properties allow NANOTER BASIC to be used wherever the special properties of the coating are not required – as MULTIFUNCTIONAL PROTECTOR.


❖ Anti-rust thermal insulation NANOTER IRON

suitable for interior and exterior surfaces, mainly metals and metal structures, pipes and tanks, metal parts of vehicles, tanks, etc., metal surfaces as anti-rust and thermal insulation.

NANOTER IRON can also be used on other surfaces that may contain metal parts: concrete and other mineral surfaces, wood and plastic and the finished surface is decorative.

In addition to its thermal properties, **NANOTER IRON** prevents corrosion and condensation and is resistant to weather and UV radiation – provides environmental protection in the temperature range -60 °C to +150 °C (short-term up to 200 °C).

Consumption for 1 mm layer 1 l/m^2. Recommended layer thickness 1 to 2,5 mm, covered in layers.

Consumption for 1 mm layer 1 l/m^2. Recommended layer thickness 1 to 2.5 mm, covered in layers.
Fire retardant properties of the material : **B S1 d0**.
Noise cancellation depending on frequency : **10 to 20 dB**

❖ Condensate repellent thermal insulation NANOTER CONDENSE

suitable for indoor and outdoor surfaces (various metals, concrete, and other mineral surfaces, also wood and plastic) in environments in the temperature range -60 °C to +150 °C (short-term up to 200 °C).

In addition to its thermal properties, **NANOTER CONDENSE** prevents the formation of condensate on the surface, is resistant to weather and UV radiation, inhibits the development of mold and plant organisms.

Consumption for 1 mm layer 1 l/m^2. Recommended layer thickness 1 to 2.5 mm, covered in layers.
Fire retardant properties of the material : **B S1 d0**.
Noise cancellation depending on frequency : **10 to 20 dB**

NANOTER CONDENSE may only be applied on completely dry surfaces, must not be used on finishing coats or tile coatings (incl. plaster, etc.).

The "Intelligent Shield" additive in **NANOTER CONDENSE** gives the coating resistance to mold. After covering the moldy structures, it suppresses the growth of mold and fungi. Mold resistance is natural, does not contain harmful biocides.

Ultra thin hydro insulation NANOTER CRYSTAL

suitable for interior and exterior surfaces (various metals, concrete, and other mineral surfaces, wood, plastic) in the temperature range –50 °C to +100 °C (short-term up to +140 °C).

In addition to its hydro insulating properties, **NANOTER CRYSTAL** has good elongation, crack, weather, and UV resistance, is resistant to mechanical damage, has the ability to repel mold and plant organisms and dirt. Due to the above-mentioned properties, it is suitable for covering the facades (incl., brick-, concrete and wood walls, log houses), different roofs, terraces, pools, basements and damp rooms.

NANOTER CRYSTAL based on base C (transparent) is especially suitable for surfaces to be renovated (e.g., wood, limestone), where it is not recommended to change the natural color and structure of the substrate. NANOTER CRYSTAL based on base A can be tinted in RAL tones.

NANOTER CRYSTAL contains the additive "Intelligent Shield."

Consumption for 1 mm layer 0,25 l/m^2. It is recommended to cover with two layers.

Fire retardant properties of the material : **B S1 d0**.

MEDIUM BREATHABLE THERMAL INSULATIONS

❖ Thermal insulation NANOTER WALL

is specially designed for covering facades in environments in the temperature range -60 °C to +150 °C (short-term up to 200 °C). The high reflectivity makes NANOTER WALL the best choice for professional facade thermal insulation used in construction. The material can also be used to improve the thermal properties of interior-exterior walls. Suitable for various mineral surfaces (incl., brick and plaster surfaces), also metals, wood, plastic.

In addition to these properties, **NANOTER WALL** inhibits mold and the development of plant organisms and is resistant to weather and UV radiation.

Consumption for 1 mm layer 1 l/m^2. Recommended layer thickness 1 to 2.5 mm, covered in layers.
Fire retardant properties of the material : **B S1 d0**.
Noise cancellation depending on frequency : **10 to 20 dB**

NANOTER WALL coating "Cool Color" uses a combination of reflective and insulating technology, which reflects the sun in hot weather to keep your home cooler and prevents heat loss during cold periods, keeping energy costs in buildings low. **NANOTER WALL** coating reflects even more than 90 % of the sun's radiant energy; the reflectivity depends on the choice of shade and the finished surface is decorative.

The result of using NANOTER WALL coating on buildings is characterized by the following thermal balance - the warmest house in winter and the coldest in summer.

❖ Thermal insulation with reinforced surface NANOTER CONCRETE

suitable for indoor and outdoor surfaces (various mineral surfaces such as plaster, lightweight blocks, brick, etc., also metal, wood, plastic) in environments in the temperature range -60 °C to +150 °C (short-term up to 200 °C).

In addition to thermal properties, **NANOTER CONCRETE** is resistant to weather and UV radiation, and the finished surface is strong and decorative. Especially suitable for interior surfaces that can later be also covered with decorative materials (wallpaper, ceramic tile, etc.).

Consumption for 1 mm layer 1 l/m^2. Recommended layer thickness 1 to 2.5 mm, covered in layers.
Fire retardant properties of the material : **B S1 d0**.
Noise cancellation depending on frequency : **10 to 20 dB**

PRO SERIES COATINGS

❖ Flexible, anti-corrosion insulation NANOTER PRO AQUAMET

suitable protection for interior and exterior surfaces of or with metal (various metals and alloys) but also reinforced concrete, other mineral surfaces, wood and plastic metal parts rust protection - in environments at temperatures from -50 °C to +120 °C (short-term up to 140 °C).

NANOTER PRO AQUAMET is resistant to weather and UV radiation, corrosion-resistant, and resistant to mechanical damage. Contains corrosion inhibitors and rust modifiers. **Quick drying!**

NANOTER PRO AQUAMET is not suitable for surfaces coated with nitro-based primers and enamels.

Consumption for 1 layer 0.25 kg/m^2. At least 2 layers are recommended.

Fire retardant properties of the material : **B S1 d0**.

❖ Flexible hydro insulation NANOTER PRO HYDROStop

suitable for HYDRO ISOLATION the interior and exterior surfaces (various mineral surfaces such as plaster, lightweight blocks, brick, etc., also metal, wood, plastic) in ambient conditions at a temperature of -50 °C to +120 °C (short-term up to +140 °C).

NANOTER PRO HYDROstop is water, weather, and UV resistant, one component, very elastic mastic, with good corrosion resistance and resistant to mechanical damage.

Particularly suitable for renovating various existing roof surfaces, where, among other things, it fills openings up to 3 mm wide, both for the construction of wet surfaces and for waterproofing.

Consumption for 2 coats 1 to 2.5 kg/m^2. Recommended layer thickness 2 mm.
Fire retardant properties of the material : **B S1 d0**

SAFETY INFORMATION

NANOTER INSULATION coatings are non-toxic, odorless.
EU VOC permissible content (subtype WB/a) up to 30 g/l, maximum VOC of the product depending on the product between 0.1 and 1.5 g/l.

The following are chemical compounds that are used in a manufacturing process that, individually or in large quantities, are hazardous to human health or the environment in one way or another.
Due to the small amounts used in the manufacturing process, **NANOTER** as a whole is safe to handle as a coating material. Due to the potential for health hazards due to high volume and prolonged exposure and the use of an airless finisher, all **NANOTER** coatings use the following hazard statements:


GHS07


GHS08


GHS09

Bases and binders:
water-based acrylic dispersion (not classified by CAS)
styrene-acrylic copolymer dispersion, CAS 9010-92-8 (nanomaterial form)

Additional technological components:
hydroxyethylcellulose CAS 9004-62-0
texanol CAS 25265-77-4
calcium carbonate CAS 471-34-1 (nanomaterial form)
silica CAS 7631-86-9 (nanomaterial form)
polyethylene wax CAS9002-88-4

Pigments: titanium oxide CAS 13463-67-7 (nanomaterial form)
zinc phosphate CAS 7779-90-0

Contact may cause skin and eye irritation, breathing difficulties if swallowed.

Use personal protective equipment and prevent material from entering waterways.

Avoid contact with eyes, skin, and clothing and ingestion. Keep out of reach of children.
If you feel unwell, seek medical advice immediately, and show this container or label.

Use personal protective equipment (clothing covering all parts of the body, gloves, respirator) when working with an airless finisher. Avoid inhalation. Ventilate the premises when working indoors. Use a roller or brush indoors that cannot be ventilated.
Dispose of contents and container in accordance with local regulations.

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