GENERAL CATALOGUE

ama® NANOTECH

THERMOGEL

NANOTECH THERMAL PAINT

In Italy, **AMA** is the leading group able to supply components and equipment for the production and maintenance of off-highway vehicles and agricultural and gardening machinery.
AMA includes AMA NANOTECH, part of the AMA COMPOSITES division, developed for the Building & Construction sector.
Ama Nanotech has devised a range of products with unique and innovative technical performance characteristics, aiming to provide practical solutions for increasingly demanding environmental requirements in the field of sustainable development and the comfort of living spaces.

SPACELOFT®
Silica gel combined with reinforced fibres to form a layer of flexible insulation padding in nanoporous Aerogel, tested and effective in walls, floors, roofs, frames and windows.

AEROPAN®
Panels consisting in an Aerogel nanotechnological insulator for the thermal insulation of buildings requiring maximum levels of insulation in the smallest possible space, with a thickness of just 10 mm and a thermal conductivity of λ = 0.015 W/(mK).

AEROGIPS
High-performance insulation panels consisting in an Aerogel-based nanotechnological insulator bonded to a sheet of high-density coated gypsum for excellent levels of thermal and acoustic comfort.

AKTIVEPAN
A thermal radiation system consisting in lime-based plasterwork as the conductive element, a heating film incorporated in an Aeropan insulation panel, a thermal sensor, a transformer, a cable, an ON/OFF switch and a thermostat.

Today, Ama Nanotech extends its range of Building & Construction solutions with the THERMOGEL PAINT line of thermoreflective paints containing Aerogel and other precious nanotechnological components, without glass or ceramic microspheres.
Formulated using advanced technologies, thermoreflective paints avoid the dispersion of energy through walls, drastically reducing thermal bridges and preventing the growth of mould without using chemical additives.
By using this type of paint with a double function - both as a surface finish and to enhance energy-saving properties - building shells become elements that play an active part in limiting the energy consumption of the entire building, with the added advantage of significant reductions in application times, with the consequence of even further savings.
In addition to guaranteeing longer duration (for example on wall coatings) on the surfaces to which they are applied, these special polymer-based paints with special additives reduce the temperatures of these surfaces both externally and internally, permitting energy savings in building climate control, a strategic element in policies for the limitation of energy consumption in a country like Italy characterized by summers that get hotter every year.

Reducing interior building temperatures by just one degree means reducing energy consumption by 8 -10%, avoiding the emission into the atmosphere of 470 kg of CO^2 every year.
When **THERMOGEL PAINT** products are applied either internally or externally, the reflection of thermal radiation prevents the supporting structures from heating up, and the **resistance to heat transfer is at least four times higher than for conventional paint products,** ensuring that heat is not transmitted towards building interiors in summer.

With these supporting structures that are not heated up from the outside, the coolness is also distributed evenly inside the building. In winter instead, the warmth generated by the heating system remains trapped inside the building for longer.
Because they reflect both light and heat, **THERMOGEL PAINT** products can be used on all surfaces through which high temperatures and solar radiation can be channelled into the building shell. This means that they can be applied not only on flat surfaces, but also on old bitumen roofing felt, exterior walls, prefabricated concrete components, plastic and glass elements and interior walls.

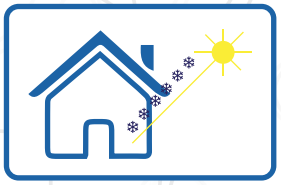
In addition to the basic requirements for paint products – protection and decoration – another crucial factor is **ENERGETIC EFFICIENCY**, aiming to achieve significant energy savings that also have important environmental impact effects.

Technical properties of the THERMOGEL PAINT range

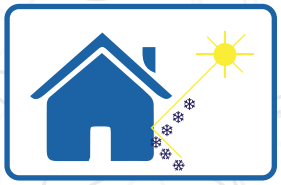
– Certified Thermogel OUTSIDE EELAB ETR 16-0060
- Solar reflectance R = 86 (Thermogel OUTSIDE ASTM C1549-09)
- Thermal emissivity E = 0.89 (Thermogel OUTSIDE EN15976)
- Solar reflex index SRI = 108 (Thermogel OUTSIDE ASTM E1980-11)
- Permeability to water vapour (Thermogel OUTSIDE Sd = 0.10 – EN 7783-2 standard)
- Maximum water repellence (Thermogel OUTSIDE W24 = 0.020 – Norma EN 1062-3)
- Thermogel METAL EELAB ETR 16-0061 certificate
- Solar reflectance R = 86 (Thermogel METAL ASTM C1549-09)
- Thermal emissivity E = 0.91 (Thermogel METAL EN15976)
- Solar reflex index SRI = 109 (Thermogel METAL ASTM E1980-11)
- Low content of VOCs
- Active protection of surfaces
- Excellent anti-mould properties
- Excellent antibacterial properties (indoor air quality)
- Excellent anti-static properties

Thanks to THERMOGEL PAINT

- there is no energy dispersion through walls
- interior living comfort and wellness are improved
- an insulation barrier effect is created
- no condensation on walls because there are fewer thermal bridges
- support surfaces are permeable but water-repellent
- humidity levels in treated spaces remain stable, preventing the growth of spores, mould and germs
- lower microcirculation of dust in interior spaces due to reduced air convection currents, helping to improve conditions of wellbeing and reducing the possibility of allergic reactions



Without Thermogel Paint, the thermal radiation of the sun is transmitted into the building in summer, heating the internal spaces, and living comfort can be guaranteed only by using air-conditioning systems.



The application of Thermogel Paint allows the solar radiation falling on the building to be reflected, keeping the interior temperature cooler and promoting energy savings. In winter, the warmth generated by the heating system also remains inside the building for longer.

APPLICATION CHART

PRODUCT	EXTERNAL WALLS	INTERNAL WALLS	ROOFS	PLASTIC	GLASS	GREENHOUSES	METALS	FLOORING	YIELD M² PER MEASUREMENT UNIT	CONSUMPTION PER M²
Nanoprimer				•			•	•	5,60	0,178
Thermogel Metal							•		5,00	0,250
Nanofix	•	•	•	•				•	6,00	0,200
Thermogel Ground	•	•							90,00	
Spotfix		•	•						6,00	0,200
Thermogel Outside	•		•						8,00	0,125
Thermogel Shine				•	•				6,00	0,166
Thermogel Inside		•							8,00	0,125
Thermogel No Spot		•							8,00	0,125
Thermogel Filter				•	•	•			7,00	
Germostop	•							•	9,00	0,111
Thermogel Top Keeper	•	•						•	4,00	0,250

The yields and consumption indicated are approximate, and refer to application of the product with the thicknesses indicated in the technical information sheet. Any differences in yield or consumption also depend on the application method used and the type of surface treated. For overspray applications, an increase of 30% in consumption must be considered.


THERMOGEL
INSIDE

Thermoreflective paint with properties of heat insulation, permeability, water repellence and resistance to mould, with low VOC contents

Thermogel INSIDE is a thermoreflective paint for interior use based on Aerogel and other precious nanotechnological components.
The product, which contains no glass or ceramic microspheres, is formulated using advanced technologies that avoid the dispersion of energy through walls. This drastically reduces thermal bridges and prevents the growth of mould without using chemical additives.
If Thermogel Inside has to be applied on a newly built wall, it must be fully hardened, dry and free from dirt and dust, including sand that is not firmly attached.

The use of Thermogel Nanofix fixative improves the adherence of the surface, giving uniform absorption and eliminating chalking.
If the surface has already been painted, old paint must be removed using suitable methods.
Wash the wall if dirt and mould are present. Before painting the support surface, it must always be suitably prepared in all other ways.

Thermogel Inside is quick and easy to apply, using a brush or a synthetic or woollen roller. The product must be diluted with 5–10% of water by volume.

The second coat can be applied after 2–3 hours, followed by the third. This allows the recommended application thickness of about 250–300 µm to be reached.

Characteristics and uses

Binder type: modified acrylic
Appearance of dry film: smooth, opaque
Colours available: white and “Cool Colours” range (pastel shades only)
Specific weight: 1.00/1.02 kg/litre +/- 0.03 at 20°C
Viscosity as supplied: 10,000 cps +/- 1,000 at 20°C
Application at optimal temp. ≥ 5°C ≤ 30°C: brush, roller, spray
Dilution: 5–10% with water
Approximate average yield: 8–9 m2/litre per coat
Drying in air at 20°C: 2–3 hours
Next coat: after at least 4–5 hours

THERMOGEL
METAL

Thermoreflective acrylic water-based enamel, with anti-corrosion and heat insulation properties, for direct application on metal

Thermogel METAL is an enamel based on Aerogel and other precious nanotechnological components, suitable for the heat insulation of metal surfaces exposed to particular atmospheric conditions, including direct sunlight. This is the most advanced product available on the market for the improvement of internal comfort in industrial buildings receiving intense quantities of sunshine, resolving all problems associated with the storage of flour, cereals and other sensitive products in silos exposed to the sun.
Thermogel METAL can in fact be used on all industrial production – for both production and storage – to help to improve interior temperature conditions inside the structures.

If Thermogel Metal enamel is to be applied to iron, first ensure that it is dry and free from magnetism. If the support surface (iron, galvanized sheet metal, steel, copper) is new, it must be dry and free from all dust and dirt.
If the surface has already been painted (sandwich panels or pre-painted sheet metal), old paint must be removed using suitable methods. Wash the wall with Thermogel Germosol if dirt and mould are present, then applying Thermogel Germofix to prepare the support surface in the best possible way.

Characteristics and uses

Binder type: modified acrylic with low VOC content
Appearance of dry film: satin
Colours available: white and “Cool Colours” range
Specific weight: 1.10/1.20 kg/litre +/- 0.03 at 20°C
Viscosity as supplied: 8,000 cps +/- 1,000 at 20°C
Application at optimal temp. ≥ 5°C ≤ 30°C: brush, roller, spray
Dilution: 5–10% with water
Approximate average yield: 4–5 m^2/litre (2 coats)
Drying in air at 20°C: 2–3 hours
Solar reflectance: 86 (ASTM C-1549-09)
Emissivity: 0,91 (EN15976)
Next coat: after at least 4–5 hours
S.R.I: 109 (ASTM E1980-11)
Certificate: EELAB ETR 16-0061


THERMOGEL
SHINE

Thermoreflective anti-algae paint with excellent properties of heat insulations, elkasticity and water repellence for surfaces in fibreglass, polycarbonate and glass

Thermogel SHINE is a paint based on Aerogel and other precious nanotechnological components, for use in industrial and civil buildings as a thermoreflective, elastomeric, water-repellent and anti-alga product for exterior applications.
The product, which contains no glass or ceramic microspheres, is particularly suitable for the protection of surfaces in fibreglass, polycarbonate and glass.

The semi-transparent appearance of the product allows a high proportion of light to pass, at the same time making it impossible to see inside or outside.
Thermogel SHINE ensures a longer duration of the paint finish, thanks to its high resistance to atmospheric agents, and it increases the optimization of energy consumption in buildings, enhancing heat insulation.
This is an E.o.W. (End of Waste) product, because part of the charges present come from 100% post-consumer recycled material, in line with a natural-resources-saving philosophy keyed to environment friendliness.
In the event of Thermogel Shine having to be applied on a newly-built substrate, this must be devoid of any impurity.

If the substrate is already painted, the old paint will have to be removed using the best method. In case of dirt or mould, the wall must be washed and, in any case, before proceeding, the substrate must be in an ideally prepared conditions. Industrial surfaces are best washed using a high-pressure washer.
The paint – ready for use – must be sprayed on, reaching a thickness of 250/300 µm approx. (corresponding to 2/3 coats).

Specifications and use

Type of binder: modified acrylic
Appearance of dry film: semi-transparent, matt, slightly rough
Available colours: non-covering white
Specific weight: 0.86 kg/l +/- 0.03 at 20° C
Supply viscosity: 8,000 cps +/- 1,000 at 20° C
Application at ideal temperature ≥ 5°C ≤ 30°C: spray
Dilution: ready to use, if necessary max 10% water
Approx. average yield: 6 - 7 sq m/l per coat excluding Over-Spray
Air drying at 20°C: 2-3 h
Overpainting: after at least 4-5 h


THERMOGEL
OUTSIDE

Heat-reflecting and heat-insulating coating with excellent elasticity and water repellency and anti-algae for outdoors

Buildings in Italy traditionally have pitched roofs covered with terracotta tiles.
The attics, moreover, are often built-up, especially in the historical centers.
The combination of low solar reflectance, combined with the low thermal inertia of wooden roofs, makes summer overheating a big problem for inhabitants.
"Cool Roof" type finishes permit significantly reducing the inside temperature of buildings and also permit obtaining an improvement in home comfort.
Defending buildings from solar radiation improves internal well-being and helps save energy, dramatically cutting costs related to the use of air conditioning during the summer.

Thermogel OUTSIDE is an Aerogel-based paint for outdoors containing precious nanotechnological components. The product, which does not contain glass or ceramic microspheres is heat-insulating and heat-reflecting, elastomeric, water repellent, anti-algae and contributes to optimizing the energy efficiency of buildings.
It considerably improves heat insulation and permits energy saving, drastically cutting the costs associated with the use of air conditioning during the summer.

It is an E.o.W. (End of Waste) product, since part of the charges present come from 100% post-consumer recycled material; thus permitting an increase in the LEED (Leadership in Energy and Environmental Design) score attributable to the building. Thermogel OUTSIDE can also be used as an elastomeric, water-resistant, outdoor, anti-algae liquid membrane, designed to protect bituminous coatings and coverings in general from solar radiation, thereby improving the energy efficiency of buildings.
It can be used on many types of roofing (bituminous, smooth or slated, TPO and PVC aged, cement, concrete, metals in general, properly prepared tiles.

The key benefits of using Thermogel OUTSIDE are:
- Reflection of sunlight (both visible and infra-red).
- Reduction of outside and inside surface temperature of building
- More comfortable interior
- Better energy efficiency of building.
- Energy and money saving.
- More LEED points.
- Better solar panel efficiency (thanks to lower roof temperature and reflected light).
- Longer-lasting bituminous coverings and roofs.
- Less thermal and mechanical stress on surfaces.

Specifications and use
Type of binder: modified acrylic
Appearance of dry film: semi-transparent, matt, slightly rough
Available colours: white and “cool colour” tintometry
Specific weight: 0.81 kg/l +/- 0.03 at 20° C
Supply viscosity: 11,000 cps +/-1,000 at 20°C
Application at ideal temperature ≥ 5°C ≤ 30°C: brush, roller, spray
Dilution: 5%-10% with water
Approx. average yield: 8 - 9 sq m/l per coat
Air drying at 20°C: 2-3 h
Water absorption: <3% (after 7 days)
Sun reflection: 86 (ASTM C1549-09)
Heat emissivity: 0.89 (EN15976)
Solar reflectance index: (ASTM E-1380) S.R.I.=108 (ASTM E-1980-11)
Certificate: EELAB ETR 16-0060

COMPLEMENTARY PRODUCTS

Universal water-based primer with surface anti-corrosion nanotechnology formula (whether metal or not)

Nanoprimer is an anticorrosive primer ideal for both metal and plastic, ceramic surfaces, etc. Nanoprimer is the perfect product whenever the need arises to use environmentally friendly, non-flammable products, which can be diluted in water.

Specifications and use
Type of binder: modified acrylic
Appearance of dry film: satin
Available colours: white
Specific weight: 1,250 kg / l +/- 0.05 at 20 ° C
Supply viscosity: 6,000 cps
Ideal application temp. ≥ 5 ° C ≤ 30 ° C: brush, spray
Dilution: max 10% of water
Approximate average yield: 7-8 sq m/l per coat
Air drying air at 20°C: 30 min to the touch, 24 h in depth
Overpaintable: with synthetic enamels and water

Insulating fixative with high penetration for outdoor and indoor surfaces

Nanofix is an insulating fixative suitable for both masonry, plaster, plasterboard and concrete surfaces and for plastic, ceramic surfaces, etc. before they are painted with water paints and connecting primers.
The product is also ideal as a hardener in rehabilitation works and renovation of old plasters that require in-depth consolidation of the surface structure.

Specifications and use
Type of binder: acrylic microemulsion with fine particles in aqueous dispersion
Appearance of dry film: satin transparent
Available colours: transparent
Specific weight: 1,000 kg/l +/- 0.05 at 20 ° C
Supply viscosity: 12 seconds cup F4 +/- at 20 ° C
Ideal application temp. ≥ 5°C ≤ 30°C: brush
Dilution: 1 part NANOFIX + 1 part water
Approximate average yield: 5-6 sq m/l per coat
Air drying at 20°C: 15-20 min to the touch, 12-24 h in depth
Overpaintable: after 12 h

Siloxane connecting primer, unifying, fibred, heat-insulating

Thermogel Ground is a water-repellent and breathing primer which ensures a high degree of protection against moulds and algae.
While it unifies the roughness of the substrate, it also helps cover up plaster defects caused by touch-ups or parts of old paints which have flaked off the substrate.
It upgrades the energy efficiency of buildings and helps improve heat insulation and energy saving.

Specifications and use
Type of binder: modified acrylic-siloxane
Appearance of dry film: matt, rough
Available colours: white
Specific weight: 1.02 kg/l +/- 0.02 at 20 ° C
Supply viscosity: 19,000 cps A6 V20 at 20°C
Ideal application temp. ≥ 5°C ≤ 30°C: brush
Dilution: water 15%-20%
Approximate average yield: 4-5 sq m/l per coat
Air drying at 20°C: 30 min powder
Overpaintable: after 6-8 h with acrylic, vinyl and siloxane paints

Water-based anti-stain fixative

Spotfix is a blocking insulating fixative for masonry, plaster, plasterboard and concrete walls and old bituminous sheaths in the event of these being impregnated with nicotine or dry damp stains. It is therefore ideal for environments such as bakeries, food production facilities, café, etc.

Specifications and use
Type of binder: anti-oxidising acrylic emulsion in aqueous dispersion
Appearance of dry film: transparent
*Available colours: t*ransparent
Specific weight: 1,000 kg/l +/- 0.05 at 20 ° C
Supply viscosity: 12 sec F4 cup at +/-20°C
Ideal application temp. ≥ 5°C ≤ 30°C: brush
Dilution: water 1:1
Approximate average yield: 5-6 sq m/l per coat
Air drying at 20°C: 15-20 min to the touch, 12 h in depth
Overpaintable: after 6 h

SPECIALPRODUCTS

Coating with heat-reflecting and heat-insulation effect for plastic or glass greenhouses

Thermogel FILTER is a heat-reflecting paint based on Aerogel and other valuable nanotechnological components for interiors. The product, which does not contain glass or ceramic microspheres is used as heat-reflecting treatment able to block and reflect the infrared component of solar radiation (700-1200λ); Thanks to these characteristics, the product achieves a significant reduction of the internal temperature of greenhouses. The semi-transparent appearance of Thermogel FILTER allows visible light (400-700λ) to pass, thus favouring the natural process of photosynthesis, ensuring optimal light requirements in terms of intensity and quality for most greenhouse vegetables. The yellow colour is particularly suitable for the production of fruits and flowers.

Characteristics and use

Type of binder: modified acrylic
Appearance of dry film:
semi-transparent, matt, slightly rough
Available colours: white and yellow non-covering
Specific weight: 0.88 kg/l +/-0.03 at 20°C
Supply viscosity: 8,000 cps +/- 1,000 at 20°C
Ideal application temp. ≥ 5°C ≤ 30°C:
spray
Dilution: ready to use, if necessary max 10% water
Approximate average yield: 6-7 sq m/l per coat excluding over-spray
Air drying at 20°C: 2-3 h
Overpaintable: after at least 4-5 h

Water and oil-repellent anti-algae solution for the protection of porous and absorbing surfaces

Thermogel TOP KEEPER is an aqueous solution with a water and oil-repellent, anti-stain and anti-algae effect on porous absorbing materials such as cotto floors, floors in natural and synthetic absorbing stones, concrete or marble floors and concrete products in general, which have to be protected against water and atmospheric agents and oil absorption.
A surface treated with Thermogel TOP KEEPER maintains its new appearance longer, and is easier to clean.
The colour of the substrate does not change and maintains enough permeability to water vapour.
The product is effective after 24 hours and is 100% complete after 2/3 days.

Characteristics and use

Type of binder: aqueous solution of modified fluorinated polymers
Liquid appearance: milky, transparent
Specific weight: 1.02 kg/l and Ph 5.5
Ideal application temp. ≥ 5°C ≤ 30°C:
brush, spray
Dilution: ready for use
Approx. Average yield: 4 - 5 sq m/l (1 coat)

SPECIAL PRODUCTS

Stain-covering paint for interiors

Thermogel NO SPOT is a paint for interiors containing precious nanotechnological components. The product is used as a finishing coat for walls and ceilings, especially in public premises where it is ideal for covering nicotine stains, soot stains, dry water stains, brush marks and spray canister stains.

Before applying Thermogel No Spot, always remove any trace of easily-detachable material and ensure the substrate is completely dry and brushed.

Characteristics and use

Type of binder: modified acrylic

Appearance of dry film: matt

Available colours: white

Specific weight: 1.5 kg/l +/-0.03 at 20°C

*Supply viscosity:*11,000 cps +/- 1,000 at 20°C

Ideal application temp. ≥ 5°C ≤ 30°C: brush, roller

Dilution: up to 10% with clean water

Approximate average yield: 8-10 sq m/l per coat

Air drying at 20°C: touch dry 1-2 h – total 36-48 h

Overpaintable: after at least 6-8 h

Anti-mould and anti-algae treatment for outdoors, specific for north-facing walls

READY-TO-USE GERMOSTOP

Particularly suitable for destroying bacteria and spores not removed by mechanical scraping action from substrates invaded by algae and mould. Ideally used as bactericide disinfectant in the preparation of primers onto which to apply water paints or coverings; suitable for concrete, marble, bricks and surfaces which have suffered fungi attack.

Characteristics and use

Active ingredient: quaternary ammonia salts in aqueous solution

Appearance of dry film: does not produce film

Available colours: transparent

Specific weight: 1.00 kg/l +/- 0.03 at 20° C

Supply viscosity: 10 seconds F4 cup +/- 1 second at 20° C

Ideal application time ≥ 5°C ≤ 30°C: brush only

Dilution: ready to use

Approximate average yield: 5 sq m/l

Air drying at 20°C: 4-5 h

Overpaintable: after 24 h

SPECIAL PRODUCTS

Levelling glue with major heat-insulation properties

Thermogel Glue, characterized by high thermal insulation and elastic properties, is a smoothing glue that finds its ideal use in finishing facade coatings.
Its thin insulating layer is able to reduce the mechanical and physical stress due to overheating of the surfaces exposed to direct sunlight.
Its use - thanks to its mechanical and elastic heat insulation properties - is also recommended in the heat insulating levelling of outdoor and interior walls.
In addition, to increase mechanical strength, between one coat and another of the glue, the possibility exists of fitting a fibreglass mesh.

In case of a new substrate, the product should be used on dry, clean and brushed walls. Apply a first coat of NANOFIX and after 5/6 hours proceed to spread the levelling Thermogel Glue.
If the substrate is already painted, make sure it is clean; if there is any mould and dirt, perform an appropriate treatment before applying the glue.

Characteristics and use
Active ingredient: modified acrylic
Appearance of dry film: rough
Available colours: light grey
Specific weight: +/- 0.02 at 20°C
Supply viscosity: A6 V20 at 20°C
Ideal application time ≥ 5°C ≤ 30°C: trowel, toothed spatula
Dilution: ready to use
Approximate average yield: 1.5/l per 1 mm of thickness
Air drying at 20°C: 24 h
Overpaintable: after 36/48 h

SPACELOFT
FLEXIBLE NANOTECH INSULATION

AEROPAN
NANOTECH THERMAL INSULATION

AEROGIPS
NANOTECH INSULATION BOARD

AKTIVEPAN
NANOTECH THERMAL INSULATION

THERMOGEL
NANOTECH THERMAL PAINT

AEROPROOF
ROOF THERMAL NANOTECH INSULATION

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Graphic project and photos by www.studiologos.eu