

A close-up photograph of several clear water droplets resting on a dark, textured surface. The droplets are spherical and reflect light, creating bright highlights. The background is out of focus, showing more droplets and the surface texture.

Waterproofing,
thermal insulating paints
& surface protection
**with the power of
nanotechnology**

SurfaShield C nanoparticles (TiO_2)
through Transmission Electron Microscope (TEM)

20 nm



What is Nanotechnology?

Nanotechnology refers to the scientific field which deals in the research and creation of matter particles, which are very small in size - usually 100 nanometers or smaller-. For example, one nanometer, one nanometer (nm) is one billionth of a meter (10^{-9} m). It is so small that if earth was one meter in diameter, then one nanometer would have been the size of an apple. When a common material shrinks at nanoscale level, **it exhibits genuine and unique properties compared to smaller molecules or larger conventional bulk materials.**

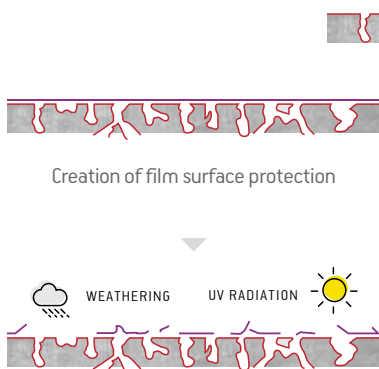
Why should I prefer NanoPhos nanotechnology products?

In contrast to other common, film-forming products or silicone-based formulations, which create a "plastic film of protection", **NanoPhos products waterproof and protect the surfaces, penetrating into their pores.** The infinitesimal size of nanoparticles enables them to achieve a deep surface penetration and dress the pores of the materials, thus repelling water or corrosive agents. Consequently, the surfaces are not affected by abrasion, deterioration or mechanical wear.

Moreover, NanoPhos products demonstrate long-lasting durability. The protection offered by the products is not affected by factors such as the "hard" part of solar light (UV radiation) while they do not induce the "yellowing" effect, without altering the appearance of treated surfaces.

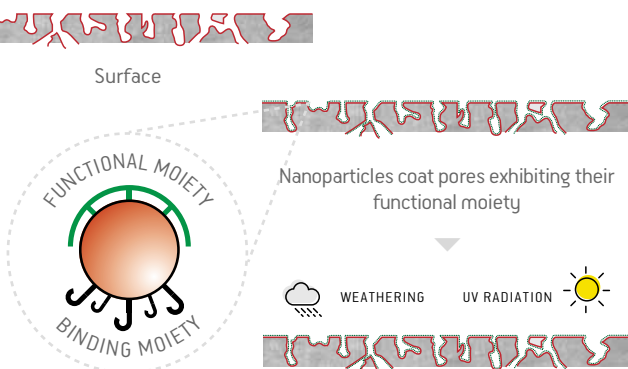
An additional important advantage of NanoPhos products compared to the common film-forming products, is the breathing ability of modified surfaces. In particular, in cases where moisture is trapped behind a SurfaPore waterproofing modified surface, the water will evaporate into the environment without accumulating inside the building's structure. In other words, water vapors can still travel inside the pores of the material and exit into the open environment, thus preventing swelling, cracking or warping.

Common Sealant Product



The film exhibits raveling because of the weather conditions and UV Radiation

SurfaPore™ Protection



Nanoparticles retain their activity while the surface is able to breathe

Advantages of NanoPhos Products

- ✓ Effectiveness
- ⌚ Long-lasting durability
- 👍 Easy to apply
- 💰 Economical
- 🌱 Ecological (Environmentally friendly)
- 🔌 Energy saving



Safety

All SurfaPore, SurfaMix, SurfaGuard, ThermoDry and SurfaShield formulations are manufactured in accordance with the Directives 67/548/EC and 1999/45/EC. They are water-based and are not considered hazardous. The Volatile Organic Compounds (VOC) content is always lower than the limits set by the European Union.

Company

NanoPhos is a purely Greek owned company that invents and manufactures “smart” materials so as to solve everyday problems through the harnessing of Nanotechnology. Nanotechnology products, have amongst other things, revolutionized the construction and building industry as they exhibit the unique ability to respond to external factors.

All NanoPhos products are the outcome of the company’s in-house research team, and they are currently being exported to more than 25 countries in Europe, Middle East, Asia and America. The vision of the company is to transfer the innovation from its lab and into the hands of its consumers. By taking advantage of the nanoparticles benefits for the end user, NanoPhos provides solutions for common “irksome” problems such as moisture, mould and thermal insulation.

NanoPhos was recognized in January 2008 by Bill Gates as one of the most innovative companies and also received the 1st prize for innovation and sustainability at the prestigious 100% Detail Show in London.

SurfaPore™, ThermoDry™, DeSalin™, SurfaShield™ and SurfaPaint™ logos are registered trademarks of NanoPhos S.A.



NanoPhos has been approved by Lloyd’s Register Quality Assurance in accordance with the standards of Quality Management System EN ISO 9001:2008 and Environmental Management System EN ISO 14001:2004 for the development, production and sales of nanotechnology products, paints and chemical products for cleaning and surface protection.

NanoPhos has been approved by Lloyd’s Register Quality Assurance in accordance with the Occupational Health and Safety Management System OHSAS 18001:2007 for the development, production and sales of nanotechnology products, paints and chemical products for cleaning and surface protection.

How do I **waterproof** and **thermally insulate** my rooftop?



INDICATIVE TIME OF APPLICATION


3-4 days

What do I need?



SurfaPore C


Water repellent for cement, grout, stucco and absorbent stone

 [page 15](#)



SurfaPaint ThermoDry Elastomeric Roof Paint

Thermal insulating, waterproofing, cool elastomeric coating for roofs, horizontal and inclining exterior surfaces

 [page 21](#)

On a clean and dry surface follow these steps:



1

Apply SurfaPore C using a roller or by airless spraying for the complete surface waterproofing.



2

24 hours after the SurfaPore C application, apply waterproofing SurfaPaint ThermoDry Elastomeric Roof Paint for maximum waterproofing and thermal insulation. Stir well before applying. Fill the large hairline cracks (>2mm) and bringing gaps with a suitable acrylic putty or coat with polyester-impregnated fabric (gauze).



3

Surfaces are primed with SurfaPaint ThermoDry Elastomeric Roof Paint and diluted with equal amounts of water. (dilution ratio 1:1).



4

Prime the surface using the diluted SurfaPaint ThermoDry Elastomeric Roof Paint.



5

Using a good quality roller, apply the first coat (without thinning) at least 5 hours after priming.



6

Apply the second coat (without thinning) at least 24 hours after application of the first coat, in cross directions i.e. one horizontally and the other one vertically.



7

Complete waterproofing is achieved 7 days after application.

How do I **clean** and **protect** my **marble** surfaces?



INDICATIVE TIME OF APPLICATION

2 days

What do I need?



DeSalin T

Absorbed stains cleaner for marbles surfaces

page 27



DeSalin K

Powerful cleaner for resistant surfaces

page 27



SurfaPore T

Sealant for polished, non-absorbent marbles

page 15



1

Cleaning: For “flamed or rough” porous marbles (unpolished) clean surface with DeSalin K diluted with water in a 1:4 dilution ratio. Then rinse with plenty of water. For polished marbles clean with DeSalin T. Apply the cleaner onto the surface and cover with a piece of cotton to reduce evaporation. Allow it to act for 24 hours. Every 3-5 hours wet the cotton with DeSalin T to keep it moist.



2

Protection: To protect **polished** marbles, use SurfaPore T. In the case of porous marbles or natural stone use SurfaPore C (waterproofing), SurfaPore M (waterproofing and oil repellency) or SurfaPaint Stone Varnish WB (transparent nano-varnish).



3

Apply SurfaPore T with a brush or roller onto the surface of the polished marble you wish to cover, without diluting it.



4

15 minutes after application and before it becomes completely dry, remove any excess material with a wet cloth and polish the surface.

How do I **remove** troublesome **mold** and **prevent** its growth from **interior walls**?



INDICATIVE TIME OF APPLICATION


2 days

What do I need?



DeSalin AM


Fungicide-bactericide for the removal of mold and bacteria and the maintenance of surfaces

 [page 27](#)



SurfaPaint ThermoDry Interior

Ready to use, thermal insulating, cool water-based, high quality formulation for interior walls and ceilings

 [page 22](#)



1

To disinfect and prevent fungi, mould and black spots growth, apply DeSalin AM by using a brush, without any prior dilution.



2

Scrub with a sponge after 24h and rinse with water.



3

Choosing from a wide variety of tinted shades, apply SurfaPaint ThermoDry Interior onto the dry surface. Apply two coats over a period of 4-6 hours, to achieve high colour quality and effective shielding against thermal bridges that lead to vapour condensation and mould growth.

How do I repair **cracked plaster** and **damaged paint** from rising damp?



INDICATIVE TIME OF APPLICATION

2 days

What do I need?



SurfaPore C

Water repellent for cement, mortar, grout, absorbent stone

[page 15](#)



SurfaMix C

Cement and plaster resin based-admixture for enhancing adhesion, elasticity, workability and waterproofing

[page 28](#)



SurfaPaint ThermoDry Interior

Ready to use, cool, water-based and high quality thermal insulating coating for interior walls and ceilings

[page 22](#)



SurfaPaint ThermoDry Exterior

Ready to use, cool, 100% acrylic water-based and high quality, thermal insulating coating for exterior walls

[page 22](#)



1

With a spatula, remove the loose material from the surface.



2

Clean the surface with a brush.



3

Apply SurfaPore C and allow for one week to pass, in order for the moisture pressure to be relieved and for the humidity to evaporate and dry.



4

Apply Surfamix C as a primer (diluted 1:3 with water). Three hours after priming, if required, re-plaster by using SurfaMix in your plaster mix. Allow the plaster to dry off.



5

Prime the repaired area using SurfaMix P as a primer. (diluted 1:3 with water).



6

Apply the appropriate paint: SurfaPaint ThermoDry Interior (interior walls) or SurfaPaint ThermoDry Exterior (exterior walls).



7

The surface dries completely within 48 hours of final application.

How do I **enhance** the efficiency of **PV panels**?



INDICATIVE TIME OF APPLICATION


1 day

What do I need?



SurfaShield G

Photocatalytic, self-cleaning and high-permeability coating for glass surfaces

 page 19

Through the use of SurfaShield G, the photovoltaic panel produces an overall increased electric energy output of 3-7% annually. This is achieved due to the increased transparency of the PV panel glass surface. Additionally, SurfaShield G enhances the light collection, especially in conditions of low light intensity (morning or afternoon hours or cloudy weather). Moreover, SurfaShield G prevents pollutants and dust from sticking on the surface thus protecting it from stains and colourants, due to its self-cleaning and antistatic properties.

1

Clean the glass surface of panel with water and detergent. Rinse with plenty of water. If residues remain, use an alcohol, such as isopropanol. The application surface should be dust or residue-free.

2

Apply SurfaShield G by HVLP spraying in two cross applications of total consumption rate of +/- 35m²/L.

IMPORTANT NOTICE

The application of SurfaShield G is performed by a specialized team, experienced in the cleaning and modification of photovoltaic modules. For further details, please contact NanoPhos (www.NanoPhos.com).



Portable PV panels after 6 months exposure in its natural environment. The difference between the right panel (unmodified) and the first two panels (SurfaShield G) in cleanliness and dust load is evident.

SurfaPore™

Waterproofing &
Surface Protection



SurfaPore nanotechnology products does not change the appearance or texture of the surface it is applied to, but instead creates a “breathable”, yet impermeable barrier of protection against water and/or oil stains.



SurfaPore C

Water repellent for cement, mortar, grout, porous or natural stone.

In contrast to other, conventional products that create a plastic film of protection, SurfaPore C waterproofing deeply penetrates into the surface. It is not affected by abrasion, deterioration or mechanical wear, and exhibits prolonged durability. SurfaPore C bears the CE quality marking.

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EN 1504-2:2004

SurfaPore C

Surface protection systems for concrete Hydrophobic impregnation

Depth of penetration: Class I_b-10mm

Water absorption and resistance to alkali:

Absorption ratio: <7.5% compared to the untreated specimen

Absorption ratio: <10% compared to the untreated specimen, after immersion in alkali solution

Dangerous substances: No substances of high concern according to regulation 1907/2006 REACH are

contained in the product.

Drying rate: Class I_b-30%



SurfaPore R

Water repellent for clay-based surfaces, such as roof tiles, cotto and pottery.

SurfaPore R preserves the aesthetic appearance of your clay surfaces while protecting them against water and greening of mould growth. After applying SurfaPore R, your clay surfaces repel water and can remain dry even after rain. Protect your roof tops and favorite clay-based surfaces from unpleasant "greening", corrosion and cracking caused by frost.



SurfaPore T

Sealant for polished, non-absorbent marbles.

It effectively seals pores that readily absorb stains while also preventing marble deterioration. It can also be applied on polished ceramic tiles (porcelanato). SurfaPore T is applied on your new or existing marble surfaces, preserving their appearance while it creates an impermeable and invisible shield by blocking even the finest pores of these surfaces. After 15 minutes and **before SurfaPore T dries completely**, remove any excess and polish by using a wet cloth.



SurfaPore M

Water and oil repellent sealant for marbles, granites and porous surfaces.

SurfaPore M does not only protect these surfaces from annoying stains, but also makes them oil and water repellent. It also prevents the surfaces from artificial colouring without blocking the pores or even changing their texture, original colour and shine. A dual protection effect from water and oil is achieved.



SurfaPore W

Water and oil repellent for absorbent wooden surfaces.

A combination of active ingredients repels water and oil stains without changing the natural appearance of wood. SurfaPore W provides excellent dimensional stability and resistance to warping. It also prevents staining and natural decay, while also shielding it against wood-boring insects.



SurfaPore F

Water and oil proofing, primer for drywalls, gypsum, carton, kraft paper and absorbent wood, such as plywood or particle boards.

SurfaPore F offers water and oil protection for drywalls and makes composite wood (plywood, particle boards) long-lasting resistant to mold, growth and microorganisms. It can also be used as a primer improving the adhesion of paints.



SurfaPore **FX WB**

Fixing, hybrid, nanomaterial for the stabilization of damaged and sensitive construction materials, such as plasters.

The absence of organic resin ensures long-lasting durability against adverse environmental conditions. It can be applied on any absorbent, loose surface to enhance abrasion-resistance. Materials such as cement tiles, porous surfaces and sandstones acquire mechanical durability while their gradual decomposition and dust growth is prevented.



SurfaPore **AG**

Suitable for the protection against graffiti on marble or masonry surfaces.

SurfaPore AG can be easily applied on existing or new surfaces to effectively preserve their appearance. It creates an invisible and impermeable barrier by blocking even the finest pores of these surfaces. After graffiti removal, no re-application is required (up to five applications).

SurfaShield™

Self-cleaning and
Antimicrobial Surfaces



Revolutionary nanocrystalline titania formulations for photocatalytic conversion. SurfaShield absorbs the ambient light and transforms the light energy into chemical, thus exhibiting self-cleaning, antimicrobial, super-hydrophilic and deodorizing properties.



SurfaShield C

Photocatalytic product for self-cleaning and antimicrobial surfaces.

SurfaShield C decomposes organic stains, prevents pollutants, bacteria, mould or fungi while it breaks down unappealing odours. It is activated by light and it is free of pharmaceutical substances. It is applied on porous surfaces, such as cement, plasters, grout, masonry and natural stones.



SurfaShield G

Photocatalytic, self-cleaning and highly transparent coating for PV glass surfaces.

The nanoparticles enhance glass transparency as they reduce surface roughness. SurfaShield G demonstrates antistatic and self-cleaning properties that eliminates sand and dust accumulation. Due to hydrophilic property, water will also not form any droplets on the PV panel to scatter the light, thereby eliminating the fogging effect.

As a result, the energy output of the PV panels is enhanced by 3-7%. SurfaShield G must be applied by qualified personnel.

SurfaPaint™

Thermal Insulation &
Waterproofing Paints



Sophisticated, functional paints with thermal insulating properties that contribute to the energy efficiency of buildings, with a simple coat on your valuable surfaces. Save energy and eliminate persistent mould and fungi growth. Nanophos “smart” paints are water repellent and highly breathable.



SurfaPaint ThermoDry Elastomeric Roof Paint

Waterproofing, thermal insulating, cool elastomeric coating for roofs, horizontal or inclining exterior surfaces.

A great deal of heat penetrates into the structure of buildings through roofs or terraces. SurfaPaint ThermoDry Elastomeric Roof Paint is a high quality waterproofing, acrylic elastomeric paint with thermal insulating properties, ideal for exterior surfaces. As a result of their thermal insulating properties, SurfaPaint ThermoDry Elastomeric Roof Paint nanoparticles block heat and moisture transfer and consequently contributes to energy saving. It demonstrates excellent durability in weathering. SurfaPaint ThermoDry Elastomeric Roof Paint waterproofs, reflects thermal radiation and blocks heat transfer, enhancing energy efficiency of buildings.



SurfaPaint Aqua X

Water repelling breathable acrylic paint for interior and exterior application.

SurfaPaint Aqua X is a water based acrylic paint that provides effective water repellency. It prevents the external humidity and rainwater from penetrating into the building substrate, eliminating cracking and swelling. SurfaPaint Aqua X is ideal for applications on buildings in urban areas or seaside, where increased levels of humidity exist. SurfaPaint Aqua X is characterized as a cool paint due to its high solar reflectance property.



SurfaPaint ThermoDry Exterior

Ready to use, water-based, high quality, 100% acrylic paint with thermal insulating properties for exterior walls.

It blocks heat transfer and reflects external thermal radiation that can result in energy savings, especially in summer. It is ideal for the application on masonry exposed to adverse weather conditions, and for the protection of damaged surfaces with micro cracks. Excellent gap bridging even in very low temperature conditions or high temperature differences. Excellent resistance to UV radiation and alkali. It is a breathable paint, preventing at the same time water penetration. It is available in the colour white for optimum thermal insulation. It can be used as a tinting base for light shades.



SurfaPaint ThermoDry Interior

Ready to use, cool, water-based and high quality paint with thermal insulating properties for interior walls and ceilings.

It blocks heat transfer and reflects internal thermal radiation contributing to energy savings, especially in winter. It prevents thermal bridges; it minimizes moisture condensation and mould growth. SurfaPaint ThermoDry Interior is ideal for children's rooms, bathrooms, kitchens, school buildings, hotels and public areas due to its high washability and scrub resistance. Suitable for every kind of new or old surfaces such as concrete, plaster, drywalls and wood. Available in the colour white for optimum thermal insulation properties. Can be used as a tinting base for light shades.



SurfaPaint ThermoDry Metals

Thermal insulating, water-based paint for metals.

Thermal energy “travels” easily through metal surfaces. SurfaPaint ThermoDry Metals Paint reflects thermal radiation and blocks heat transfer. SurfaPaint ThermoDry Metals can be directly applied on ferrous metallic surfaces without a primer while it withstands elevated temperature environments up to 150°C. Available in light shades. Suitable for industrial buildings, metal surfaces, tubular heat exchangers and metal tanks.



SurfaPore ThermoDry

Nanotechnology and Microtechnology additive for making any acrylic water-based paint thermal insulating and water repelling.

It “blocks” thermal transfer and protects against moisture, making paints water repelling and resisting mould growth in the interior of the buildings. It eliminates water condensation which causes black spotting and fungi on walls. SurfaPore ThermoDry does not only reflect thermal radiation, but also resists heat transfer while it increases the energy efficiency of buildings.

It is used as an additive for any water based paint, increasing its original volume by 61.6%.



SurfaPaint Floor Paint

High quality, water-based paint for interior and exterior cement-based surfaces.

It is applied for the protection of pavements, yards, garages and warehouse floors. Easier to apply compared to polyurethane or epoxy paints. It offers stain resistance and good adhesion. It is ideal for preventing stains caused by water or oil (motor oil, tyre marks), as it prevents their absorption. It is recommended for interior or exterior use during pedestrian traffic or limited vehicle traffic. It is water repellent and resistant to damages. It is also applied for the protection against heat radiation, weathering, and chemical staining.



SurfaPaint Stone Varnish WB

Transparent, nano-varnish for the protection of stone and cement-based surfaces.

It is used for the decoration and protection of stone, concrete, roof tiles and other porous substrates. It is nano-acrylic and resin-based, providing excellent adhesion, penetration depth and resistance to damage and abrasion. It becomes satin and/or glossy in texture (after 2 or 3 coatings) respectively while it does not peel away or turn yellowish. When applied, it creates a transparent, resistant, protective coating that prevents stains caused by water, oil and microorganism growth. It even shields against acid-stains, such as wine or lemon. It is easily applied and dries quickly.



SurfaPaint Kirei

Cool, 100% acrylic paint with self-cleaning and deodorant properties.

Inspired by the japan word "Kirei" that means clean and beautiful, SurfaPaint Kirei is a cool, self-cleaning paint, keeping your treated surfaces brand-new. Through solar energy, it decomposes pollutants. It also prevents dirt adherence, inhibits bacteria, fungi and mold growth, it eliminates unpleasant odors and improves the air quality. Suitable for interior surfaces. SurfaPaint Kirei reflects heat (more than 95% of near infrared radiation [NIR]). The nano-sized particles of titanium dioxide contained in SurfaPaint Kirei are activated by both natural and artificial light while they remain activated during the whole lifetime of the paint. Available in the colour white for enhanced cooling properties.



SurfaMix P

Nanostructured Water-based Primer for Emulsion Paints

SurfaMix P is a versatile water based primer for surface preparation, before the application of emulsion paints. Ideal for exterior or interior building surfaces, such as concrete, masonry, plaster, cementitious renders, screeds and mortars. The fine resinous nanoparticles that exhibit a size distribution around 60nm can penetrate deep in the substrate yielding a coherent and solid result for the application of emulsion paints.

SurfaMix P can be also applied on already painted areas, when a paint refresh is required. Well engineered to be applied on humid surfaces, where mould problems are existent. SurfaMix P reduces the water absorption coefficient of porous substrates. It does not affect the breathability of the substrate. It is water based, odourless and environmentally friendly. Slightly bluish in colour for identifying the application pattern.

It is cost effective, as it can be diluted by water up to 4 (porous cementitious renders or masonry) or 5 times (painted substrates) its original volume.

DeSalin™

Cleaning & Restoration



Cleaning and restoration formulations for cement-based surfaces, mortar, grout, stucco, natural or artificial stones, roof tiles, clay-based products, cotto, granite and marbles. Special antimicrobial cleaning for the restoration of mold growth on walls.



DeSalin C

Cleaner for the removal of efflorescence stains.

DeSalin C is recommended for application on building facades, cement tiles, pavement tiles, natural and artificial stone, roof tiles, roof tops and pottery. It removes salt deposits, greening, algae and fungi. Fast and effective action even in diluted form. No cleaner residues remain after application and rinsing with water.



DeSalin K

Powerful cleaner for resistant surfaces.

Ideal cleaner for mortar, grout and paint residues. Effective action on rust and black spots on chemical resistant surface. Quick action. Can be diluted with water. Highly acidic formulation.



DeSalin T

Absorbed stains cleaner for marble surfaces.

A very active acid-free cleaner, especially formulated for polished, sensitive surfaces such as marble, granite or stone. Removes persistent, deeply absorbed organic stains (like wine or coffee), without destroying their shine.



DeSalin AM

Sterilizing cleaner for the removal of mold, algae and maintenance of surfaces.

DeSalin AM is a powerful water-based fungicide that kills mould, algae and microorganisms, providing long-lasting protection. Ideal for cleaning infected surfaces and preventing the black and green spotting caused by microorganisms. It can be used as a preventive treatment for the cleaning of internal surfaces with high moisture, such as kitchens, bathrooms and basements and exterior surfaces such as stone, tiles, fountains and around swimming pools.



SurfaMix C

Cement and plaster resin-based admixture for enhancing adhesion, elasticity, workability and low water up-take.

Reduces cracking, shrinkage and the formation of water absorbing capillaries. Ideal admixture for exterior or interior masonry coatings, patch, repair and re-profiling mortars and mortar grout. Even though SurfaMix contains no SBR, it can be used wherever latex admixtures are used, with even better results. It promotes the adhesion of ceramic tiles. Can be used diluted as a primer to improve the adhesion of surfaces. It improves workability and bears the CE quality marking.

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EN 934-3, T.2
 EN 934-3:2009 + A1:2012
 SurfaMix C
 Air entraining/plasticizer admixture for masonry mortar

Maximum chloride ion content: 0.10%
 Maximum alkali content: 2.50%
 Corrosion behavior*:
 Dangerous substances: No substances of high concern according to regulation 1907/2006 REACH are contained in the product.

*Contains components only from EN 934-1:2008 Annex 1

Anticorrosive Protection & Metal Primer



SurfaGuard Metals

Corrosion inhibitor/shop primer for ferrous surfaces such as carbon steel, cast iron, galvanized (incl. plated) steel, stainless steel, aluminum and zinc alloys.

Passivates and decreases corrosion rate up to 10 times. Suitable for the marine environment. It is easily applied by dipping, brushing or spraying. It primes metallic surfaces for paint application, as the adhesion of the paint coating is enhanced. Removal of any excess is required.





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