Project:
Water protection of porous surfaces such as cement, stones, walls and grout

Product:
SurfaPore C

Key Benefits:
- Effective composition based on Nanotechnology
- High Breathability
- Non Film Forming, Invisible
- Long Lasting & UV Resistant
- Easy Application on Surface or mixed in mortar
- Water based
- Environmentally friendly
- Cost Effective

Applications:
- Walls & Basements
- Rooftop Water repellent
- Render & Stucco Protection
- Mould Growth Prevention
- Efflorescence Prevention
- Tile Grout Sealing
- Rising Damp Protection

Packaging:
1L, 4L, 30L Containers, 1000L IBCs

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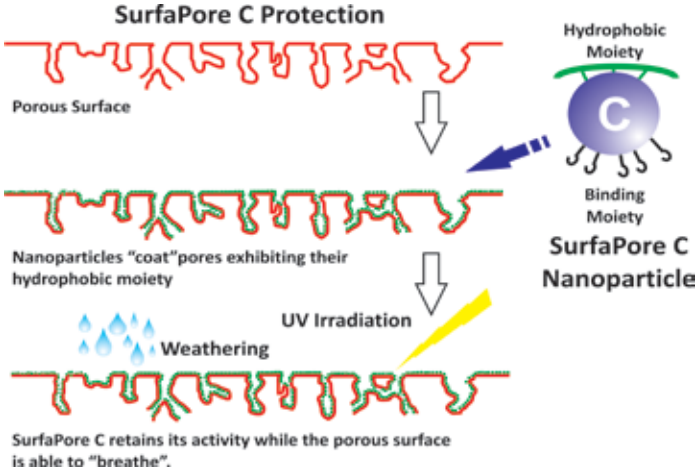
SurfaPore® C

Nanotechnology for cement surfaces, mortar, grout, stucco and natural or artificial stones.

SurfaPore C formulation compared to conventional formulations do not create a “plastic film” on the applied surface. It creates a water repelling protection by deeply penetrating into the pores of the substrates, instead of sealing them. Therefore, the substrate is deeply protected and therefore not affected by abrasion or mechanical wear. SurfaPore C modified surfaces last longer comparing to conventional film coatings and are more resistant to the “hard” part of solar light (UV radiation) which does not induce the “yellowing” effect.



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SurfaPore C Description

SurfaPore C is a water based, liquid formulation, developed and produced by NanoPhos SA, that provides water repellency and protection of a wide range of building surfaces. As its viscosity is similar to that of water, it deeply penetrates into capilaries that no elastomer or polymer can reach. It is applied with roller, brush or spraying. The nanotechnology based composition assures effectiveness, prolonged lifetime and no change of the original natural appearance.

Whilst SurfaPore C creates a water barrier on the material itself, one of the most important advantages of SurfaPore C is the "breathability" of the modified surface. In case moisture is trapped or a water leakage takes place behind a SurfaPore C modified surface, water can evaporate through the open pores to the environment relieving negative capillary pressure. In this manner swelling and cracking of material are prevented. All in all, SurfaPore C modified surfaces remain dry and unchanged in both appearance and mechanical properties.

International Standards Testing

Drying test for hydrophobic impregnation (EN 13579:2002): The effect of hydrophobic impregnation is measured with drying rate coefficient. Class I. **Water absorption and resistance to alkalis (EN 13580:2002):** The effect of hydrophobic impregnation is measured with water absorption resistance and the resistance to alkalis, AR=7% and AR_{alk}=1.2%. **Mass loss after freeze-thaw salt stress (EN 13581:2002):** The SurfaPore C treated sample does not exhibit mass loss after 20 cycles. **Water absorption under low pressure (RILEM Test Method 11.4)**: The test procedure determines the water absorption rate of a concrete surface. Loss of water is inversely proportional of waterproofness. After 24 hours with water contact treated sample exhibited zero absorption, while the untreated absorbed 19 cm^3. **Water absorption coefficient due to capillary action (EN 1015-18:2003)**: Water absorption coefficient due to capillary action is inversely proportional to waterproofness and was measured C_m=0.08 kg/(m^2·$min^{1/2}$) for SurfaPore C and C_m=0.33 kg/(m^2·$min^{1/2}$) for reference. **Water Vapor Transmission of materials (ASTM E96)**: Water Vapor transmission loss was determined as the rate of water vapors pass through a 2cm thick cement sample. Vapor Permeability Loss: 3.82% (surface application) and 20.12% (mixing). **Corrosion protection test (EN 15183:2006):** SurfaPore C doesn't affect the behavior of reinforcing rebars in treated concrete.

CE

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SurfaPore C
Surface protection systems for concrete
Hydrophobic impregnation
EN 1504-2:2004

Depth of penetration: Class II > 10mm
Water absorption and resistance to alkali:
- Absorption ratio <7,5% compared with the untreated specimen
- Absorption ratio <10% 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 > 30%

VOC (Volatile Organic Compounds): Maximum VOC content of this product is 1g/L.

Application Note

Surface Application: The application surface should be dry and clean. Apply SurfaPore C by using a brush, roller or spraying. No dilution is required. On very absorptive surfaces re-apply within 3 hours. **Mixing:** Replace 1/3 of water used in your mix with SurfaPore C. Mix well. In any case (surface application or mixing) test results on a small area before full scale application. Maximum water repellency is achieved 24 hours post application. **Consumption:** Estimated consumption rate 8-10 m^2/L, strongly dependant on the properties of the surface applied.

Physical Properties

Milky White, Water Emulsion with slight odour and pH 5.5±0.5. Boiling & Flash Point: >100°C. Auto Ignition Point: >100°C, Density: 1 ±0.03 g/cm^3. Viscosity: 2 mPa·s. SurfaPore C is not considered an oxidant.

Safety & Storage

The product is not classified as hazardous pursuant to the provisions set forth in EC Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). Avoid breathing dust / fume / gas / mist / vapours / spray. Use only outdoors or in a well-ventilated area. Avoid from freezing. Expiration Date: Two years after the production date.

What is Nanotechnology?

Nanotechnology refers to the scientific field, which deals with the research and creation of small matter particles, usually sized below 100 nm. One nanometer (nm) is one billionth of a meter (10^{-9} m) - it is so small that if earth were one meter in diameter, then one nanometer would have been the size of an apple! Nanosized materials reveal unique properties when compared to ordinary, bulk materials or even molecules.

NanoPhos at a Glance...

At NanoPhos, we take advantage of the unique properties of nanotechnology and invent clever materials that solve every day problems. By harnessing nanotechnology, we seek to create a more comfortable, safe and trouble-free living environment. We transfer innovations out of our lab and into the hands of consumers. Our vision is clear: "Tune the nanoworld to serve the macroworld" – in simple terms we make nanoparticles solve common problems. NanoPhos was recognized in January 2008 by Bill Gates as one of the most innovative companies and also received the 1st prize for innovation at the prestigious 100% Detail Show in London. NanoPhos is a rapidly growing company that is actively expanding its distribution network. Currently, the company is present in the UK, Norway, Sweden, Denmark, Portugal, Spain, France, Italy, Greece, Cyprus, Egypt, Sudan, Saudi Arabia, Bahrain, UAE, Qatar, Oman, Iran, India, New Zealand, China, Japan, Mexico, Guatemala, Thailand, Malaysia and Singapore.

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LLOYD'S REGISTER · LRQA — ISO 9001 · ISO 14001 — OHSAS 18001 — UKAS MANAGEMENT SYSTEMS 001

NanoPhos SA has been approved by Lloyd's Register Quality Assurance to follow the EN ISO 9001:2000 Quality Management System and the environmental management system EN ISO 14001:2004 for the development, production and sales of chemical products for cleaning and protection of surfaces and nanotechnology products. Furthermore, it is certified for occupational health and safety management systems with OHSAS 18001:2007.

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