Project:
Elasticity and workability improvement of cement and plaster

Product:
SurfaMix C

SurfaMix® C

Cement and Plaster Admixture for Enhancing Adhesion, Elasticity, Workability and Water Resistance.

Benefits:
- Enhances (doubles) adhesion
- Promotes bonding
- Improves workability
- Prevents cracking
- Reduces water penetration
- UV and weather resistant (does not become yellowish)
- Extends working time
- Water based
- Cost effective

Applications:
- Plasters and renders
- Exterior or interior masonry coatings
- Cementitious mortar/grout
- Patch, repair and reprofiling mortars
- Strengthening of adhesive materials for tiles/stones
- Floor screeds/overlays

SurfaMix C is a water-based admixture for cementitious mortars, grouts, renders and plasters that enhances adhesion and bonding on application surfaces. Furthermore, it improves elasticity and reduces cracking, shrinkage and the formation of water absorbing capillaries. SurfaMix C is an ideal admixture for exterior or interior masonry coatings, patch, repair and re-profiling mortars, mortar grout and as an enhancing agent for adhesive materials used when laying ceramic tiles and stones. SurfaMix C improves workability and extends the working time of the mix. Finally, it reduces water absorption.

Cementitious Mix

Cementitious materials require water for bonding and hardening. Uncontrolled setting can induce cracking of the surface or extended cappilaries formation.

SurfaMix C Addition

SurfaMix C controls the water reaction with cementitious materials, decreasing rapid shrinkage and cracking. At the same time, a bonding grid fills the microscopic gaps, enhances the elasticity of the material and promotes bonding on the application surface.

Packaging:
Canisters of 1Kg, 4Kg, 10Kg, 30Kg & IBC tanks of 1000Kg

4Kg & 10Kg canisters are equipped with volumetric view stripe .

www.NanoPhos.com

SurfaMix® is a registered trademark of:
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NanoPhos
Pioneering Nanotechnology

SurfaMix C Description

SurfaMix C is a water based, liquid formulation, developed and produced by NanoPhos SA. It can be mixed with cementitious powders to enhance their adhesion and bonding on application surfaces. SurfaMix C makes mixing easier and setting times are almost double, enabling larger mix volumes and increasing workability during application. SurfaMix C is added in small quantities (5-10% per weight) and always as a part of the cement content and not of the total mix, that may include water and inert material (sand gravel, lime, etc.). In any cementitious mix, the addition of water is essential for setting, curing and the development of mechanical strength. During hydration, individual cement particles react with each other and create a strong and durable solid phase. Most often, this process is inefficient, resulting in extensive cracking, failure or poor adhesion of the cured cement. An extended network of material fills the void volume of the cement and promotes surface adhesion and bonding. This also reduces cement surface ingress of dirt and weathering. Furthermore, SurfaMix C prevents unwanted moisture, that may rise through the structure (i.e. rising damp) or penetrate from the outside (i.e. condensation). Finally, the cured cementitious mix is more durable against surface corrosion, negative water pressure, frost threat and extreme weather conditions. As a result, SurfaMix C modified cement surfaces last longer.

International Standards Testing

Consistence determination of fresh mortar (ISO EN 1015-3): Reference: 44 mm. Sample with SurfaMix C: 41 mm.

Adhesion bond strength of mortar (ISO EN 1015-12): Reference: 0.2 $N \cdot mm^{-2}$ Sample with SurfaMix C: 0.4 $N \cdot mm^{-2}$. **Determination of workable life and correction time of fresh mortar (ISO EN 1015-09)**: Reference: 173 min, Sample with SurfaMix C: 281min

Water absorption coefficient due to cappilary action (ISO EN 1015-18): Reference: 2.2.10^{-3} K g/(m^2.$min^{1/2}$) Sample with SurfaMix C: 0.7·10^{-3} K g/(m^2.$min^{1/2}$).

Determination of chlorine content (ISO 1158 method B): <0.10%.

Determination of the alkali content of admixtures (EN 480-12): 2.50%.

Determination of air content of fresh mortar (EN 1015-7 method A): Reference initial: 5.2%, Sample with SurfaMix C: initial 15%, after 1h 14%, after extended mixing 16.5%.

Determination of flexural and compressive strength of hardened mortar after 28 days (EN 1015-11): Reference: 30.6 MPa, Sample with SurfaMix C: 23.3 MPa

Reduction in water requirement for standard consistence (EN 480-13): 8.4%.

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

maximum chloride ion content: 0.10%
maximum alkali content: 2.50%
corrosion behavior[1]:-
Dangerous substances: No substances of high concern according to regulation 1907/2006 REACH are contained in the product
[1]Contains components only from EN 934-1:2008 Annex 1

Application Note

Add SurfaMix C directly in the cementitious mix, at a ratio of 5-10% by weight of the cement used. Alternatively, add 2,5 - 5 Kg of SurfaMix C for every 50 Kg of cement. For strengthening of adhesive materials of tiles and stones add 0,5 kg SurfaMix C into 25 kg. SurfaMix C cannot be used as plasticizer in reiforced concrete.

For improved water repellency use SurfaPore C on dry cement based surfaces. If you wish to paint use as a primer SurfaMix P.

Physical properties

Milky white, water based emulsion with pH 9.5±0.5. Boiling, ignition and autoignition point: >100°C. Density: 1.00±0.02 $g \cdot cm^{-3}$. Viscosity 2500 mPa.s

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 from freezing. Expiration Date: Two years after the production date.

LIMITED WARRANTY INFORMATION – PLEASE READ CAREFULLY. The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that NanoPhos' products are safe, effective, and fully satisfactory for the intended end use. Suggestions of use shall not be taken as inducements to infringe any patent. NanoPhos specifically disclaims any other express or implied warranty of fitness for a particular purpose or merchantability. NanoPhos disclaims liability for any incidental or consequential damages. This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

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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 to 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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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.