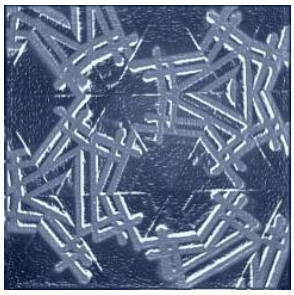


Nanosil®RNP 975

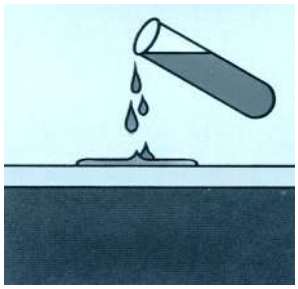
Nanosil® is a dilution of pre-solved **R**eactive **N**ano **P**articles. Nanosil®RNP reacts with free alkali in the concrete and creates a better concrete quality.

Nanosil®RNP 975 react with fresh and hydrated cement. During this reaction Nanosil®RNP 975 develops silica and submicron crystalline calcium and aluminosilicate. This process takes place inside the pores, capillaries and structure and provide the protection and waterproofing of the concrete.

Thiese products don't create films. The reaction products act as additional high strength binding agent. They fill pores and fine cracks, seal and harden the concrete surface and the structure till 10 - 20 mm deepness. Nanosil®RNP doesn't contain any flighty substances - except water. It doesn't contain resins and it don´t create crusts.

The modification of the Reactive Nano Particles stabilises the products and avoid a to quick reaction with the fresh cement. Especially the deep penetration into the fresh concrete is much better compared with similar products available on the market.

Application



Nansil®RNP 975 consolidates and protects the structure of abrasion and harmful substances

Nanosil®RNP 975 is an excellent chemical consolidation material for fresh concrete or cement screed. It enhances significantly the surface strength, abrasion and the associated fine dust won´t occur. The consolidated structure hardly no longer able to suck up liquid materials, therefore harmful substances are no longer able to attack the concrete.
Additionally Nanosil®RNP 975 is an efficient curing agent and steam break and protect fresh concrete before rapid drying up without creating disturbing film. The excellent curing property avoids cracking due to rapid drying.
Already cured concrete and screed, as well as concrete plates and concrete stones could be tempered and strengthened with a Nanosil®RNP 975 treatment.
Surfaces will be protected from abrasion. The compacting of the capillary structure reduces the sucking capacity of the building material. Harmful substances and pollution are no longer able to entry the building material easily. Nanosil®RNP 975 protects concrete from contaminats.

Nanosil®RNP 975 is additionally hydrophobic which reduces the water absorption and increases the frost de-icing alteration.

Nanosil®RNP 975 doesn't create film and won´t change the natural appearance of the building surface.
The reaction products and the nanospheres are chemically very similar to the typical ingredients of cementatious build materials.

With Nanosil® treated areas could be painted or coated - even after years - with all usual systems.

Processing

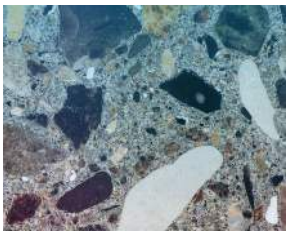
on fresh screed and concrete

The treatment of fresh concrete or fresh screed takes place after the setting until the material is walkable. Applied with low pressure spraying or pouring with watering can. Application must be done equally and without ponding but saturated.

For top quality, machine smoothed concrete floors the application could be done with the last smoothing process - with a very good result. An afterwards equal overspray with Nanosil®RNP 975 is recommended even with this technique.
After complete setting and after reaching the aspired strength the surface is usable.

Even on used floors - and repair

For already used surfaces a treatment is possible after a thorough cleaning. Grease, oil, dust and dirt must be removed with suitable cleaners (HydroClean®525 - allround cleaner for concrete and HydroClean®527 - removes oil from concrete surfaces) to gain a effective result. For equal soaking the surface must be wetted in advance.
Nanosil® is applied to weak humid (non shining) surface. For a sufficient soaking the application should be done in two steps.



A very effective method - even on rough undergrounds - is to brush in the tempering material. The material is applied with pouring can and immediately brushed in. Practically use a auto scrubber with a scrub brush.
After gel creation - Nanosil®RNP 975 creates a white weak mass - the spill-over will be mixed with water and removed with a rubber wiper or hovered, the surface must be washed afterwards. The dried left over of this water material mixture is a fine crumbly material and easily removed by sweep of.

On stones and tiles made of concrete

The treatment of stones and tiles made of concrete is similar. Rough surfaces - such as blasted concrete tiles or plaster coverings - must be treated equally without pond creation in the cavities.

Concrete with smooth and closed surface such as polished concrete stones or Terrazzo coverings must be swept with a rubber wiper app. 10 -15 minutes after treatment to remove material left over. Rewash it after 20 minutes with clean water.

Restrictions

Nanosil®RNP 975 is not suitable for natural stone, ceramic or washed-out concrete. After treatment (impregnation, painting, coating) with similar materials a tempering treatment with Nanosil® is no longer possible.
The same appears on surfaces which are fresh but already treated with curing based on oil, wax or latex.

optical effect coloured concrete sample areas

Nanosil®RNP 975 binds dust and changes the light refraction of the treated surface, which therefore appear somewhat more colour intensive. With prolonged use - especially with frequent wet cleaning - smooth surfaces treated with Nanosil® will have a slight silky shine. This is caused by a polishing effect due to the mechanical stress on the hardened surfaces.

Stains may occur on surfaces of coloured concrete due to incompatibility between Nanosil®RNP 975 and certain colour pigments. For this reason, test areas should always be created on coloured concrete floors. This recommendation also applies to surfaces where high demands are placed on the visual effect and colour fidelity, e.g. polished cast stone slabs and terrazzo.

Consumption

The material consumption is low and depends on the condition of the surface and the application technique. For impregnation of a smoothed fresh concrete and for set, smooth concrete surfaces, approx. 0.15 - 0.20 kg of kg Nanosil® per m²are required, for concrete slabs with a sanded surface and for terrazzo the consumption is even lower.
In the case of highly absorbent concrete or screed surfaces or floors with a greater surface roughness (concrete paving, finely sandblasted concrete slabs), the material requirement can be up to 0.5 kg/ m^2 and can only be determined by laying a test surface

Properties

Name	Nanosil®RNP 975
Composition	Colloidal diluted nanoparticles
Appearance	Practically odourless, slightly turbid liquids
Density	Approx. 1,15 gr/ml
pH	10,5 - 11,5
Viscosity	20 cStk (approx. 11,5 sec / DIN-cup, 4 mm)
Odour	Nearly not noticable, typical
Thinner	Water

Test results*

	Zero test	Nanosil®
Compressive strength after 7 days	35 N/mm^2	40 N/mm^2
Abrasion (Taber, 1000gr/1000 U)	0,16 g	0,03
Water intake	0,55 ml	< 0,1 ml
Salt absorption through capillary suction	0,79 g	0,43 g

*Test sample concrete DIN EN 206 with 300 kg CEM 32,5/m^3

Safety • Storage • Disposal

Nanosil®RNP 975 is similar alkaline to cement and building lime.
Avoid contact with skin and mucosa. Wear protective gloves and googles, avoid aerosol creation meanwhile spraying.

Nanosil®RNP 975 doesn't contain any solvents, no toxic ingredients, it is not flammable. There are no special dangers for environment coming from Nanosil®. Keep away from children and unauthorised personal. The materials contain water and will be damaged when frozen. Protect from frost.

Small material left over and fresh pollution with Nanosil®RNP 975 could be washed with water. Bigger material left overs could be mixed with water and hardened with cement or lime. Disposal as building rubble.

ARCAN Waterproof
ARCAN GmbH Spezialbaustoffe

Kleinniedesheimer Strasse 19
D-67240 Bobenheim-Roxheim
Phone: +49 (0)6239 - 99 78 20
Mail: office@arcan.biz
Web: www.arcan.biz

passion to invent