

Nanoalps® System SAFE - The mineral sealant

Nanoalps® System SAFE is an environmentally-friendly, non-toxic polymer additive which creates water-impermeable layers, seals and also rehabilitates contaminated grounds. It is used with clay mineral binding agents as well as reduced grain-size minerals and recycled raw materials.

Characteristics:

- Improved elasticity and high levels of waterproofing
- Minimisation of dry-splitting through a reduction in the swellability
- High level of chemical and biological stability
- Good processability
- Cost-savings through a reduction in the required layer depth



Application areas:

Nanoalps® System SAFE can be used in all areas where a high level of impermeability and waterproofing is required, e.g.:

- Landfill sites
- River and sea dykes
- Dams and embankments
- Water reservoirs and water-storage facilities
- Near to rivers and protected water and nature areas

Service

The aggregates used are examined by specialists from the Nanoalps® laboratories. Depending on the individual requirements, the optimal mixture is created and produced. The successful application and use is guaranteed by suitability tests, field tests and post-implementation checks.



Load-tests show an improvement in material stability



Without the use of the polymer the material remains brittle and long tears appear.



With Nanoalps® System SAFE the load is spread out more evenly, so that the wearing-down of material is minimised.

Technical data:

Nanoalps® System SAFE - strengthening of the mineral course layer at a high rate of sealing

Strength:	Uni-axial compressive strength of 1.0 N/mm ² - 5.0 N/mm ² adjustable
Resistance to frost:	Depends on requirements and material
Rate of water permeability:	k-values of up to 10 ⁻¹¹ m/s

Nanoalps® System SAFE enables a reduction in layer depth and construction costs whilst improving the rate of impermeability

Through the use of Nanoalps® System SAFE a higher level of impermeability is achieved and the depth of the mineral layer can be reduced to a large extent.

Build-up with Nanoalps® System SAFE

- A: Recultivation layer
- B: Geomembrane 400 g/m²
- C: 30 cm drainage layer
- D: PEHD foil 1,000 g/m²
- E: 20 cm mineral layer using Nanoalps® System SAFE
- F: 20-40 cm gasdrainage and compensation level



Without the sealing characteristics of the polymer additive the layer would otherwise have to be drastically increased and this results in a lower level of chemical stability.

Traditional build-up

- A: Recultivation layer
- B: Geomembrane 400 g/m²
- C: 30 cm drainage layer
- D: PEHD foil 1,000 g/m²
- E: 100 cm mineral layer
- F: 20-40 cm gasdrainage and compensation level