

Silicate-Technology



Maleki®-DW 100 / Maleki®-LL 100
| Silicate Sealer / Impregnation

Silicate-Technology

| Innovative solutions for sustainable construction

Silicates are one of the most resistant materials worldwide. The silicate technology is suitable for industrial areas and also has a unique performance.

During curing respectively hydration cementitious binders build calcium silicate hydrate (CSH) and Ca(OH)_2 (portlandite). While portlandite assume important functions for reinforcement protection in reinforced concrete, it is also responsible for creating unwanted concrete corrosion. Acids dissolve Ca(OH)_2 and transform it into salts which are visible as „efflorescence“ on the surface.

The below described liquid silicates transform Ca(OH)_2 -components into permanently resistant calcium silicate hydrates. The amount used on the covering of the subject also determines the penetration depth so that the cementitious substrate is permanently protected.

For the general protection of your concrete or cementitious substrate you won't need further protective coatings after using Maleki®-DW 100 and Maleki®-LL 100. While other protection systems keep pollutants out of the reactive components of the concrete, the Maleki®-products react with reactive parts of the old or new cementitious substrate to form a long lasting chemically resistant silicate matrix.

For this reason it is possible to use the products factory-provided to protect your old and new cementitious surfaces against chemical attack and weather influences permanently. The liquid silicates can be used directly in the concrete mix. The use of these products is nonhazardous to health and they are environmentally friendly.



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Range of use:



Sewage water

- Concrete manholes
- Concrete pipes
- Concrete constructions
- Sewage water treatment plants

Agriculture

- Stables / slatted or concrete floors
- Silos
- Concrete tanks

Road construction

- Concrete pavements and slabs
- Kerb constructions
- Bus stops
- other surfaces

Saltwater loaded areas

- Port facilities
- Facades in coastal areas
- Bridges
- Coastal and shoreline stabilization

Building construction

- Facades
- Basement waterproofing
- Flooring
- other concrete surfaces

Maleki®-DW 100

| Silicate Sealer

Maleki®-DW 100 is a one-component silicate liquid deep impregnation. It reacts with the cementitious binders of the substrate and forms a silicate, stable and acid-resistant matrix. Through the impregnation of the substrate and the resulting crystallization the pores are permanently sealed, which will protect your cementitious surface long lasting against attacks of acids, salt water and other aggressive influences.

Outstanding properties:

- Significant increase of chemical resistance
- Solidifies cementitious substrates
- Poresealing, or -reduction
- Protection against efflorescence
- Suitable for use on wet surfaces

Additional properties:

- Deep penetrating
- Heat-resistant
- Low viscosity, highly fluid, odorless
- Environmentally friendly

Area of application:

- Chemical industry
- Sewer repair, sewage water treatment plants
- Tank construction
- Agriculture, stables
- Concrete pavements and slabs
- Plaster and basement walls
- Saltwater polluted areas

Certificates:

- Chemical resistance against in-/organic acids
- Hygiene certificate
- Surface protection system
- Reduction of bacterial growth on concrete substrates
- Others on request



Maleki®-LL 100

| Silicate impregnation

Maleki®-LL 100 is a one-component liquid silicate impregnation. It reacts with the Ca(OH)_2 and forms a silicate, stable and acid-resistant matrix. It additionally forms a long-lasting hydrophobicity on the surface of the substrate pores where it has been treated. Therefore, the cementitious material is protected twice by reduction of Ca(OH)_2 and by the formation of an additional hydrophobic silicate sealer.

While Maleki®-DW 100 is particularly used in areas with a high acid load, Maleki®-LL 100, because of its additional hydrophobicity is used especially for exposed concrete facades, plaster and salt water areas. Maleki®-DW 100 and Maleki®-LL 100 used in combination constitute the best protection for a cementitious surfaces.

Outstanding properties:

- Increasing the chemical resistance
- Solidifies cementitious substrates
- Hydrophobicity and pore sealing
- Protection against efflorescence
- Suitable for use on wet surfaces

Additional properties:

- Heat resistant
- Fast drying process
- Low viscosity, highly fluid, odorless
- Environmentally friendly

Areas of application:

- Saltwater polluted areas
- Plaster, facade and floor
- Concrete pavements and slabs
- Agriculture, stables

Certificates:

- Surface protection system
- Hygiene certificate
- GUA - Reduction of bacterial growth on concrete substrates
- Chemical resistance to organic and anorganic acids
- Others on request



Factory-provided protection

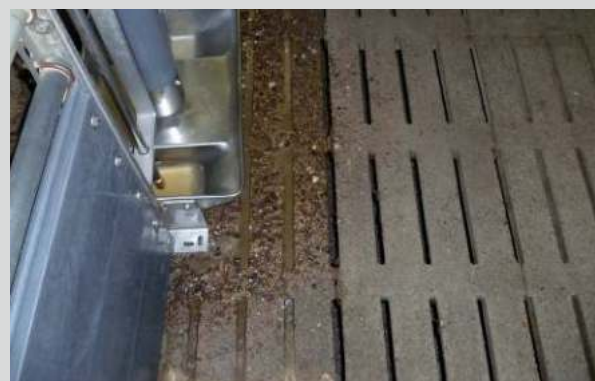
| Against efflorescences and acid attacks

For the factory-provided protection of paving, paving slabs or various precast concrete you can use Maleki®-DW 100 already during the production step.

The addition can be carried out in the mixing water and can be adjusted as required. In a quantity of 1 - 4 %* Maleki®-DW 100 can reduce the critical portlandit parts in concrete by up to 80%.

The Result is an effective protection against efflorescence and a significantly increased acid resistance.

*Based on the amount of mixing water



Untreated split tiles after several years of usage



Treated split tiles after several years of usage

Maleki®-DW 100 and Maleki®-LL 100

| Properties and application

Treated / Untreated



Chemical resistance

With Maleki®-DW 100 and Maleki®-LL 100 treated surfaces are significantly chemically resistant even under strong acid load. For example storage of concrete for 28 days at pH 2 (left picture).



Abrasion resistance

With Malei®-DW 100 and Maleki®-LL 100 treated surfaces exhibit significantly solid surface structures.



Hydrophobia (Maleki®-LL 100)

Prevents the infiltration of pollutants into cementitious surfaces therefore no efflorescence and structural damage can occur.

Application:



Cleaning by high pressure flushing



Application with a roller



Application by spraying

Maleki®-DW 100 / Maleki®-LL 100

| Silicate Sealer / Impregnation

Tender text

Silicate Sealer/ Silicate Impregnation: Maleki®-DW 100 or Maleki®-LL 100

Holohedral and saturated impregnation of cementitious substrates with Maleki®-DW 100 / Maleki®-LL 100 or equal. The cementitious surface has to be cleaned of loose particles and dirt before impregnation by high pressure flushing. The pure potassium silicate must be applied by spraying, rolling or brushing up to the saturation limit. For more procedural information please refer to the technical data sheet from the manufacturer

Properties:

- Hydrophobia (Maleki®-LL 100)
- Increasing the chemical resistance
- Increasing the abrasion resistance and surface hardness
- Deep impregnation (Maleki®-DW 100)
- Water vapor permeable
- Can be used on damp surfaces



Maleki GmbH
Carl-Stolcke-Str. 1
D - 49090 Osnabrück

Tel: +49 541-2024799-0
Mail: info@malekigmbh.com
Web: www.malekigmbh.com

