



KEIM ROYALAN[®]

SILICATE BASED PAINTS
FOR EXTREME CLIMATIC CONDITIONS



KEIM Royalan® – a mineral step in the right direction

Key features of KEIM Royalan® coatings

- Highly durable**
- Breathable and water vapour permeable**
- Ideal moisture balance**
- Particularly economical**
- Absolutely colour stable and UV-resistant
for long lasting beautiful colours**
- Silicate matt surface appearance**
- Easy to apply and easy to refinish**
- Environmentally friendly**
- Perfectly coordinated system components**



KEIM mineral paints – The history of an innovative idea

KEIM mineral paints were a Bavarian invention with their roots deep in the country's heritage. They are synonymous with the technical refinement and high quality, also found in other products that originate from this area of the Alps, kings and castles.

Buildings decorated with KEIM in the 19th century are still in excellent condition today.

Amongst such examples are the White Eagle Restaurant in Stein am Rhein and the City Hall in Schwyz, both located in Switzerland and decorated in 1891 (see pictures above).

Waterglass forms a permanent bond between paint and substrate

The scientist A.W. KEIM successfully combined waterglass (potassium silicate) with inorganic colour pigments to produce a paint, that both penetrates and chemically reacts with the mineral substrate onto which it is applied. KEIM becomes a part of the surface whereas organic paints merely form a skin on the surface.

Today's environmental awareness has led to increasing demands for environmentally harmless, long lasting and high quality paints. KEIM responds to this by providing a wide range of mineral based products. The successful development of a proven basic concept.

Environmental responsibility

These high-quality silicate paint systems offer top performance, durability, protection and colour fastness that is unequalled.

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Natural ingredients

Selected raw materials underlie the unique quality of KEIM's silicate paints:

The ideal combination of liquid potassium silicate as binder, naturally occurring mineral fillers and inorganic colouring pigments ensure maximum weathering resistance and unsurpassed durability.

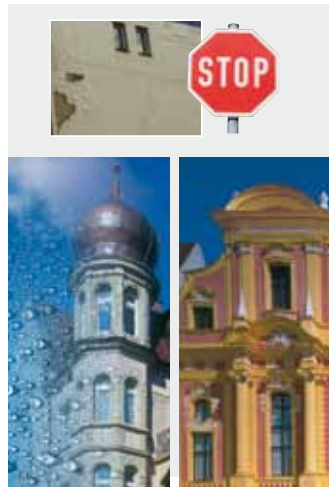


Silicification

Silicate systems are based on the silicification of the binder with the substrate. A strong, permanent bond is created between the paint and the underlying substrate (render, natural stone, concrete etc.). The render cross-section reveals the silicification process using coloured KEIM Fixativ (liquid potassium silicate).

Durability

KEIM silicate paints have an unequalled durability – numerous buildings worldwide provide proof for more than hundred years due to KEIM's unique properties: Potassium silicate as a binder is highly resistant to weathering, the mineral fillers are perfectly combined and the chemical bond with the substrate is extremely durable. KEIM silicate paints don't flake, the binder does not disintegrate by UV-light. They are absolutely resistant to acid gases (acid rain) and industrial pollution. (Project painted in 1890 in Switzerland)

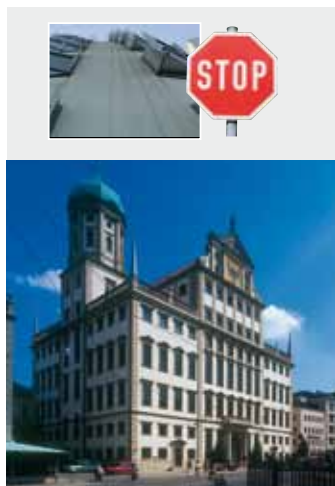


Moisture balance

Breathability and water vapour permeability is the most important criterion for good moisture balance. The extremely high permeability for water vapour of KEIM silicate coatings is the result of a specific structure of the cured waterglass. Humidity contained in the building structure may thus be released unhindered and fast into the environment. No accumulations of humidity, which may lead to damages, can occur between coating and substrate. In combination with a low water absorption, this is an optimal protection against water and frost damages.

Cleanness

The tendency of coated surfaces to become soiled is influenced by the static charging characteristics and thermoplastic properties of the binder. Organic synthetic resin/silicone resin binders become electrostatically charged in the wind due to friction and so actually attract dirt particles onto themselves from the air. At higher temperatures, these binders additionally exhibit thermoplastic behaviour, i.e. they become "tacky", creating ideal conditions for dirt particles to become stuck. Paints with a water glass binder are antistatic and non-thermoplastic. So they remain clean for long time.



Colour stability

The colour stability of exterior wall paints is influenced by the nature of the pigments and of the binders. UV light modifies the colourfulness of organic pigments. KEIM paints contain exclusively high-quality, lightfast, mineral pigments. UV light and exposure to weathering also give rise to binder degradation in organic binders. Microcracks form, which modify refraction and make the colour shade of the coating appear greyer. Mineral binders such as potassium waterglass exhibit the greatest UV resistance of all binders and are moreover absolutely weather-resistant.

Why KEIM Royalan®?

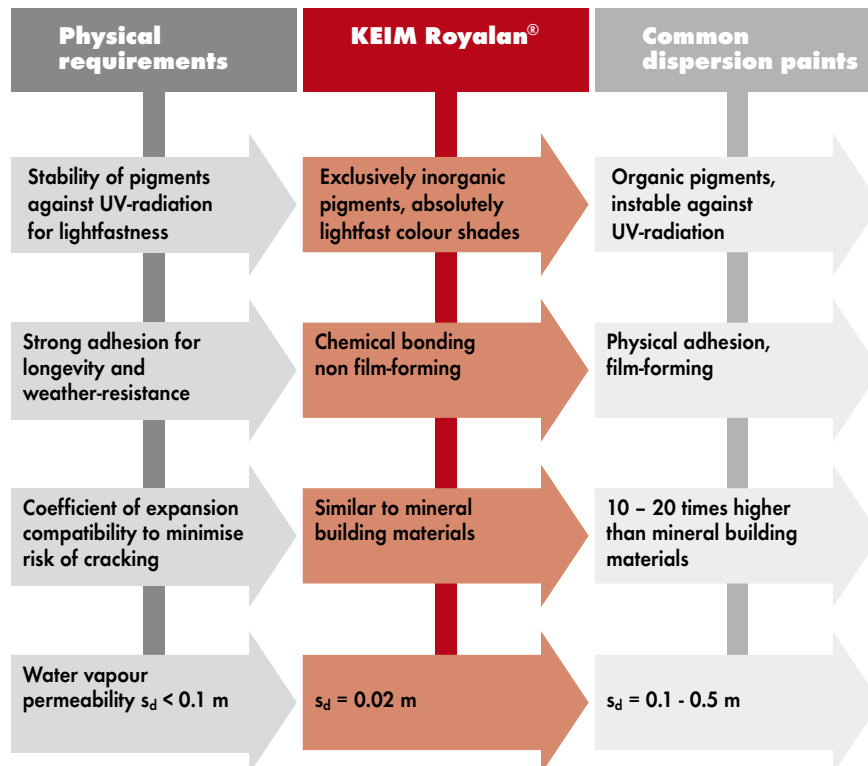
Longevity particularly under extreme climatic conditions

KEIM Royalan® paints are a generic development of KEIM mineral paints, engineered to meet the challenges of extreme climatic conditions.

KEIM mineral paints are renowned for their proven durability which lasts for decades. KEIM Royalan® is especially formulated for extreme coastal and

tropical climates. KEIM Royalan® is a one-component system, ready for painting and spraying.

A range of more than 200 standard shades plus custom colours provides a wide variety of creative possibilities.





KEIM Royalan® -System

Product	Description	Application
KEIM Royalan®	Silicate based paint, to be diluted with KEIM Royalan®-Dilution according to specification	Application by brush, roller or airless sprayer
KEIM Royalan®-Grob	Highly filled, silicate base coat to close cracks up to 0.5 mm and for a coarse appearance, to be diluted with KEIM Royalan®-Dilution	Application by brush or roller as priming coat, followed by one coat of KEIM Royalan®
KEIM Royalan®-Dilution	Silicate based dilution for KEIM Royalan® products	May also be used as surface stabiliser in certain cases.
KEIM Royalan®-Tinting-Concentrates	Pure colour concentrates for tinting KEIM Royalan® and KEIM Royalan®-Grob	Can also be used as paint by brush or roller.



Supplementary Products

Product	Description	Application
KEIM Algacid-Plus	Acid-free algae and fungi remover	Pretreatment
KEIM Lime Remover (KEIM Ätzflüssigkeit)	To remove sinter layers from new render and to clean old facades	Pretreatment
KEIM Silan Primer (KEIM Silangrund) or KEIM Silan -100	Silane based water repellent primer	Pretreatment plus additional water protection
KEIM Universal Render (KEIM Universalputz) (Standard and Fine)	Lime-cement render, fibre-reinforced for localised repairs and/or full rendering	Substrate preparation
KEIM Glass Fibre Reinforcing Mesh (KEIM Glasfaser-Gittermatte)	Glass fibre mesh, 160 g /m ² , 4 x 4mm, to be embedded in KEIM Universal Render	Substrate preparation



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