



KEIM ROYALAN[®]

SILICATE BASED PAINTS
FOR EXTREME CLIMATIC CONDITIONS



KEIM MINERAL PAINT IS EXTREMELY
DURABLE, LIGHTFAST, UV-RESISTANT,
ECONOMICALLY AND ENVIRON-
MENTALLY FRIENDLY.



KEIM – A MINERAL STEP IN THE RIGHT DIRECTION



City Hall in Schwyz (CH), original painting from 1891

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.

WATERGLASS FORMS A PERMANENT BOND BETWEEN PAINT AND SUBSTRATE

The scientist A.W. KEIM successfully combined water-glass (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.

These high-quality silicate paint systems offer top performance, durability, protection and colour fastness that is unequalled. Buildings decorated with KEIM in the 19th century are still in excellent condition today. For example the City Hall in Schwyz (Switzerland) that was painted in 1891.

THE RIGHT DECISION: KEIM ROYALAN

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.

KEY FEATURES OF KEIM ROYALAN

- 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

ADVANTAGES AND BENEFITS OF KEIM SILICATE TECHNOLOGY



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.



Raffles Hotel Singapore
Architecture: R. A. J. Bidwell



CLEAN

Silicate paints by KEIM stay clean in the long term. The combination of inorganic pigments and mineral binding agents results in coating solutions that pair durability with long-term cleanness. Compared to paints with conventional organic binding agents (e.g. emulsion or silicone resin paints), silicate coatings are antistatic and non-thermoplastic. This makes it hard for dirt particles to adhere to the surface, for facades that stay clean and beautiful for a long time!



SILICIFICATION

Silicate paint systems with their typical binder water-glass (liquid potassium silicate) are based on the principle of silicification. Once applied the paint penetrates the mineral substrate, such as render, natural stone or concrete, and forms a permanent, long lasting, chemical crystalline bond.





XXII Carat Club Villas, Dubai (UAE)
Tangram Architects & Designers



DURABLE

A facade coating should last at least 20 years – in terms of both appearance and functionality. That’s no great challenge for KEIM paints, as they can easily last twice as long. It is even no rarity for them to survive for a century. The ideal combination of liquid potassium silicate as binding agent, mineral fillers from natural deposits and inorganic colour pigments guarantees maximum weather resistance and unsurpassed durability.



Jupiter Inlet Lighthouse, Jupiter, FL (US)
Architecture: George Gordon Meade



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.



COLOUR STABLE

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®?



Marina Bay Sands Hotel, Singapore, Architect: Prof. Moshe Safdie

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.

PHYSICAL REQUIREMENTS	KEIM ROYALAN	COMMON DISPERSION PAINTS
Stability of pigments against UV-radiation for lightfastness	Exclusively inorganic pigments, absolutely lightfast colour shades	Organic pigments, instable against UV-radiation
Strong adhesion for longevity and weather-resistance	Chemical bonding, non-film forming	Physical adhesion, film forming
Water vapour permeability sd < 0.1 m	sd = 0.02 m	sd = 0.1 - 0.5 m

KEIM ROYALAN®-SYSTEM

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:

KEIM ALGICID-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 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/m², 4 x 4mm, to be embedded in KEIM Universal Render.

Substrate preparation.

„The KEIM Royalan mineral silicate based paint system is perfectly suited to withstand unusually harsh climatic conditions.“

WATER-REPELLENT IMPREGNATION AND PRIMER

Product name	Material base	Properties		
		Solvent-free	Active agent content	Water-repellent impregnation
KEIM SILAN-100	Alkoxysilane	x	100%	x
KEIM SILAN-C80 (pasty)	Alkylalkoxysilane and -siloxane, emulsion in water	x	80%	x
KEIM SILAN-40-W	Alkylalkoxysilane and -siloxane, emulsion in water	x	40%	x
KEIM SILAN PRIMER	Alkylalkoxysilane/silanes in ethanol		approx. 20%	x



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