

## KEIM Royalan®

Extreme Weather Mineral Silicate Finish



### 1. Product description

KEIM Royalan is a ready-to-use exterior mineral silicate paint system for use in subtropical/tropical and extreme weather environments. It offers water repellency, high vapor permeability and forms a chemical bond with the mineral substrate. KEIM Royalan is made using pure inorganic mineral fillers, absolutely lightfast inorganic pigments, additives and potassium silicate binder.

### 2. Field of application

KEIM Royalan is a 2 – 3 coat system that can be used for all mineral, absorbent surfaces. Due to its outstanding product characteristics, KEIM Royalan is particularly suitable for old historic and new surfaces. Ideal absorbent surfaces include but are not limited to, brick, stucco, historic masonry, stone, lime plasters, mortars, CMU, GFRC, cement boards and renders. In combination with products from the KEIM Royalan system a wide variety of application areas are possible.

Exceptions not suitable for coating with KEIM Royalan are resin based coatings, plasto-elastomeric coatings, saponifiable old paints (e.g. certain oil-based paints), non-wettable substrates (e.g. lacquers and varnishes).

Optional water repellency can be added with a treatment of KEIM Silan-100 before the first coat of KEIM Royalan.

Other areas of application: KEIM Royalan is widely used by artists and muralist around the world for public art and murals. It is desired for its UV stability (will not fade), chemical bonding, weather resistance, pollution resistance, and extreme durability. Building from the 2 coat KEIM

Royalan system they complete their art work with the 12 Royalan-Monochrome colors RO9001 – RO9010, RO1001 (gold) and RO1002 (silver).

KEIM Royalan is not suitable for horizontal and slightly inclined surfaces exposed to weathering or floor surfaces.

### 3. Product properties

KEIM Royalan is a long life exterior silicate-based paint with a modified potassium silicate binder. KEIM Royalan has excellent hiding power and contains only absolutely lightfast inorganic pigments. KEIM Royalan protects the substrates from environmental influences.

- Excellent protection for extreme climatic conditions
- Highly water vapor permeable
- Lightfast - will not fade
- Resists mold and fungal growth
- Easily cleaned
- Easy to overcoat
- Non-flammable
- Non-film-forming
- Mineral matt finish
- All components UV-resistant
- High resistance to weathering
- Resistant to industrial pollution and acid rain
- Water repellent
- No solvents
- Easy application

#### Material characteristics

- Specific weight: approx. 1.46 g/cm<sup>3</sup>
- VOCs (white or tinted) ASTM D6886: < 8g/l
- Gloss at 85° ISO 2813: 0.5 matt
- pH-Value: approx. 11



- Color fastness: A1  
(FB-Code according to technical bulletin No. 26)
- Vapor diffusion equivalent DIN EN ISO 7783-2  
air layer thickness:  $s_d = 0.01 \text{ m}$
- Water vapor transmission rate: DIN EN 1062-1  
 $V = 2100 \text{ (g/m}^2\text{d)}$
- Vapor permeability ASTM E96 80 - 85 perms
- Liquid water permeability:  $w = 0.12 \text{ kg/ m}^2 \cdot \text{h}^{0.5}$   
DIN EN 1062-3 class III
- Thermal Expansion: comparable to the  
mineral substrate to which  
it is applied.
- Flash point: non-flammable will not burn
- Accelerated Weathering ASTM G154: Pass  
2016 hours "No change to the KEIM Royalan"
- Wind-Driven Rain ASTM E514: Pass  
Results: "No water leaked through"

### Color Shades

Standard colors according to the KEIM Palette Exclusiv.

KEIM also offers custom matching to your color selection within our natural mineral range.

On-site tinting only with KEIM Royalan Monochrome shades.

## 4. Application instructions

### Substrate Preparation:

The substrate must be sound, solid, dry, absorbent, clean and free of dust, grease, oils, salts, moss, algae and other substances that would prevent bonding. Old oil based coatings, loose substrate layers and organically bound coats must be removed. Repair damaged areas before painting.

For repaired substrates and also on substrates with textural differences or hairline cracks up to 0.3mm use KEIM Royalan-Grob as the base coat instead of KEIM Royalan.

Larger cracks 0.3 – 0.9mm or strong differences in texture may require a primer coat with KEIM Contact-Plus (0.3 – 0.5mm) or KEIM Contact-Plus-Grob (0.5 – 0.9mm).

Before KEIM Royalan or KEIM Royalan-Grob is applied, it is recommended that highly absorbent substrates or surfaces exposed to severe moisture or weathering may be treated with a water-repellent substrate treatment using KEIM Silan-100 to enhance waterproofing. A subsequent base coat of KEIM Royalan or Royalan-Grob must be applied after approx. 4 to 12 hours drying time for KEIM Silan-100.

Soft, porous highly absorbent surfaces or old existing mineral coats may be stabilized by pre-treatment with KEIM Royalan-Dilution.

New mortar or masonry surfaces may require treatment with KEIM Lime Remover before painting if they have a sinter layer.

Surface contaminants should be entirely removed by suitable mechanical and/or chemical means. Old, film-forming coatings which may hinder the vapor diffusion and/or which are not well adhering must be removed with KEIM Bio Stripper (paint stripper) or by mechanical means.

Well adhering organic old coatings that will remain on the surface must be coated with KEIM Contact-Plus as primer coat prior to subsequent applications of KEIM Royalan or KEIM Royalan-Grob.

Very soft old sanding substrates may be consolidated first with a treatment of KEIM Fixativ.



### Application

KEIM Royalan is typically a 2 - 3 coat system applied by brush, roller or airless spraying (nozzle size 0.79 mm/0.031 in.). Application by brush or roller for base coat can be advantageous to ensure full coverage working it well into all surfaces.

A minimum drying time of 12 hours between coats is required.

*Two-coat-system:*

Base coat: KEIM Royalan or KEIM Royalan-Grob diluted up to maximum of 20% (25.6 oz/gallon) with KEIM Royalan-Dilution.

Finish/Top coat: KEIM Royalan undiluted.

*Three-coat-system:*

Base coat: KEIM Royalan or KEIM Royalan-Grob diluted up to maximum of 20% (25.6 oz/gallon) with KEIM Royalan-Dilution.

Intermediate coat: KEIM Royalan or KEIM Royalan-Grob diluted up to maximum of 10% (12.8 oz/gallon) with KEIM Royalan-Dilution.

Finish/Top coat: KEIM Royalan undiluted.

Stir diluted KEIM Royalan and KEIM Royalan-Grob before and during application. Neither water nor any other materials may be added. For the finish coat it is important to work swiftly wet-in-wet maintaining a wet edge. Work corner to corner or use an architectural feature as a starting and stopping point.

### Application conditions

From 41°F up to max. 86°F (+5°C - 30°C) air and substrate temperature.

Only apply in dry weather conditions. Do not apply under direct sun or on sun-heated substrates or in strong wind. After application, surfaces must be protected from strong wind and direct sun until

dry (3-6 hours) and from rain until they are cured (12-36 hours). Times depend on temperature and humidity.

### Drying times

Dry to touch in 1-3 hours.

For recoating, at least 12 hours between coats.

For the finish coat, allow 12-36 hours.

If a pretreatment of water repellencies was applied allow drying before base coat is applied. Approx. 4 - 12 hours after KEIM Silan-100.

### Consumption

The stated consumption figures are guide values for a smooth substrate. Exact values can only be determined by painting test areas on the structure to be coated using tools and techniques that will be used for the final application.

KEIM Royalan

275 - 325 sq.ft./gallon

### Tools

Clean immediately after use with water.

### Mixing with other products

In order to maintain the specific features of KEIM Royalan and the related system products, they may not be mixed with other products or additives nor may they be diluted with water.

## 5. Packaging

1 gallon

and

4 gallon (packaged in a 5 gal pail)

Only for RO1001 and RO1002 - 1kg, 5 kg and 25kg containers



## 6. Storage

Shelf life approx. 12 months, if kept cool, but frost-free in tightly closed unopened containers.

**Note:** Remnants of material from opened containers should be filled in smaller buckets in order to maintain the air content in the bucket at the lowest possible level.

## 7. Hazardous substances ordinance class

R52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S 26: Avoid release to environment. Refer to special instructions/safety data sheets.

## 8. Transport hazard class

n/a

## 9. Disposal

EC Waste code No. 08 01 11

Dispose of completely emptied containers in accordance with local, state and federal regulations.

## 10. Safety instructions

KEIM Royalan is alkaline. Cover all areas which are not to be coated, especially glass, ceramics and natural stone. Any splashes on surrounding surfaces or traffic areas must be rinsed off immediately with plenty of water. Protect the eyes

and skin from splashes. Do not swallow. Keep out of reach of children.

Refer to the relevant safety data sheets.

Contains Propiconazole: may produce an allergic reaction.

This product is only intended for the sale to and the application by professional applicators. The application instructions as well as the labeling are to be adhered to. The recommendation values and characteristics stated are the result of intensive development work and practical experience. Our verbal and/or written recommendations regarding the use and application of our products are to assist in the choice of our products and are not the basis of a contractual and/or legal relationship. They do not release the purchaser and/or applicator from the obligation to verify the suitability of our products for the intended application with due diligence. The prevailing general rules of building technology are to be respected. KEIMFARBEN GmbH & Co. KG has adopted a policy of constant product development. Modifications serving the improvement of the product or its application are reserved. This edition supersedes all earlier editions.

