



KEIM MINERAL PAINTS

STONE RESTORATION, PROTECTION & DECORATION



KEIM MINERAL PAINTS

KEIM Mineral Paints were developed over 140 years ago and are used globally to provide extremely long lasting, protective and durable coatings with a reputation for being the best paints in the world.

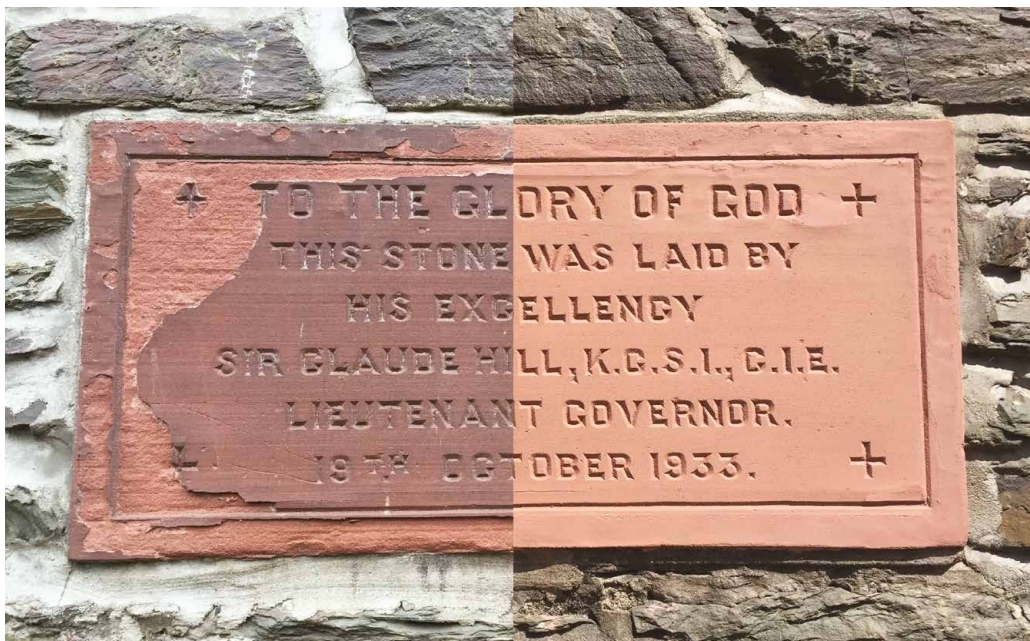
KEIM paints penetrate and chemically bond with the mineral substrate onto which they are applied, becoming an integral part of the surface, whereas oil based paints merely form a skin on the surface. KEIM Mineral Paints are natural, water-borne liquid silicate paints which produce an extremely durable, colourfast, sustainable protective finish with high vapour permeability, which work in harmony with the environment.

KEIM Mineral Paints was established in the UK in 1987.

Offering a wide range of KEIM products including pre-treatments, external and internal paints, renders, concrete repair systems, and mineral restoration materials, KEIM Mineral Paints are the UK's acknowledged experts in mineral paints, renders and repair systems. KEIM Mineral Paints provide a technical and support service encompassing project specifications, application and colour advice to a diversity of projects, from historic to modern, restoration to new build, private and public. To date, KEIM Mineral Paints have been applied on over 15 million square metres of surfaces within the UK.

KEIM – Unparalleled performance and durability.

BEFORE



AFTER

WHAT ARE KEIM MINERAL PAINTS ?

Environmentally Friendly -

KEIM Mineral Paints are water borne, odourless, non-toxic and manufactured with natural ingredients using a low energy manufacturing process. KEIM Mineral Paints contain neither solvents nor any petro-chemical derivatives, are inherently non-combustible and do not give off any toxic gases. Over their entire life cycle from raw material extraction to production, processing and ultimate disposal, mineral paints have an excellent environmental profile.

Durable -

Mineral paint systems are based upon penetration (silicification) of the binder into the substrate. A strong, permanent bond is created between the paint and the underlying substrate (e.g. render, natural stone, concrete). This potassium silicate binder is highly resistant to weathering, ensuring an extremely long-life protective finish, reducing the frequency of re-decoration cycles. KEIM Mineral Paints do not flake and the binder does not disintegrate under the effect of UV light. They are resistant to acid rain and industrial pollution.

Cleanliness -

KEIM Mineral Paints have no residual electrostatic charge, unlike oil based paints, and therefore do not attract dust. Over time they remain cleaner than oil based paints. The silicate structure is highly stable and able to resist acid and alkali attack, while the inherent alkaline nature of KEIM Mineral Paints means they are resistant to the growth of fungi and algae spores.





Colour stability -

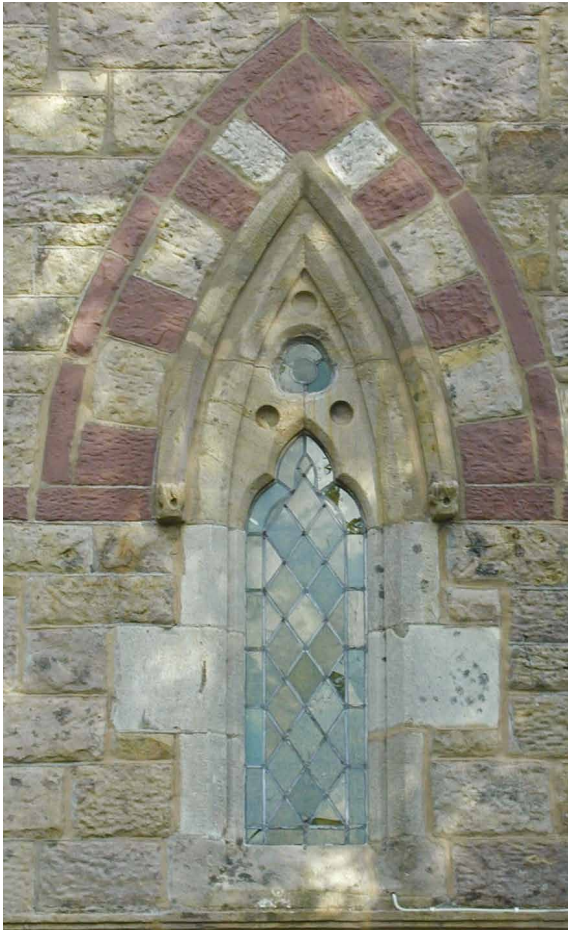
KEIM Mineral Paints contain exclusively high-quality, lightfast, mineral pigments and binders which exhibit the greatest UV resistance of all paint systems, and are highly weather-resistant. All KEIM colours are unaffected by weathering and UV radiation, ensuring no colour fade with the passage of time. Having a bright matt appearance, the crystal structure of KEIM Mineral Paints gives a high level of light reflectance compared to oil based film forming paints of a similar colour.

Incombustible -

KEIM Mineral Paints are inherently non combustible, do not support the spread of flame and give off no noxious emissions due to their inorganic composition. Mineral paints are therefore ideal for use in safety critical public areas such as underground stations and tunnels, airports, schools and flats.

Breathable -

The micro-crystalline nature of the KEIM coating system creates finite spaces between adjacent crystals, which are large enough to allow the free passage of vapour, but small enough to prevent the ingress of driven rain. This imparts the KEIM Mineral Paint system with high water vapour permeability. This high breathability enables moisture vapour contained in building structures to be quickly released unhindered into the environment, avoiding moisture build up between coating and substrate, and preventing damage to the surface and building structure resulting from trapped moisture.





STONE SURFACES & PREPARATION

There are various types of stone used in buildings throughout the UK and many will at some time call for restoration of the existing stonework to protect the stone and the building structure as well as enhance the aesthetic appearance.

Regardless of the specific type of stone; whether it be sand, lime, rubble or granite, KEIM's Restauro stone restoration materials offer a complete system for the preparation, consolidation, restoration and decoration of the same.

Due to the specialised nature of the KEIM Restauro stone repair system and complementary products, advice should be sought from KEIM Mineral Paints before use.

All stone surfaces should be prepared prior to any restoration. The stone should be cut back to a sound base, cleaned to ensure it is free from surface contaminants and consolidated if necessary:

KEIM Steinreiniger N – Natural, biodegradable, stone cleaner concentrate for cleaning of all stone surfaces.

KEIM Silex OH – Specialist stone consolidant for the preparation of unstable and friable stone surfaces prior to application of stone repair materials.

STONE RESTORATION

Stone replacement mortars are used for reconstructing stone. The KEIM Restauero range of dry bagged, mineral based restoration mortars are ideal for repairing damage to natural stone surfaces.

The system is developed to be compatible with all types of stone and provides breathability, durability and a finish which can be matched and blended into the existing original stonework.

KEIM Restauero Grund - For repair of large defects. For lining deep areas of damage (greater than 20mm).

KEIM Restauero Top - A coloured, finishing mortar that may be dressed back to match the surrounding surface. Available in a range of colour shades and to match the original stone.

KEIM Restauero Fuge - For joint filling and replacement between stonework. Available in a range of colour shades and to match the original stone.



KEIM RESTAURO® MORTARS

TECHNICAL INFORMATION

1 Field of application

KEIM Restauro stone mortars are mineral dry bagged pre mixed restoration mortars with hydraulic binders used for stone repair.

KEIM Restauro Grund – Deep repairs
KEIM Restauro Top – Coloured finishing
KEIM Restauro Fuge – Coloured joint reinstatement

2 Product properties

- Easy to apply
- Long lasting
- Comparable to natural stone
- Can be colour matched (Top & Fuge)
- Can be dressed to match surrounding stonework

Compressive strength: approx. 8-10 N/mm²

Colour shades

KEIM Naturstein colour range with specials available.

3 Application instructions

Substrate preparation

Remove loose material and old coats mechanically or with a water pressure jet. All loose and friable material should be cut back to a sound level.

Application

All mortars should be mixed with clean cold water to moist earth consistency and applied to slightly pre-wetted surfaces.

KEIM Restauro Grund – Apply in one or more layers from 10mm - 50mm, finish approximately 5mm below finished surfaces. Roughen and allow a minimum of 1 day before application of KEIM Restauro Top.

KEIM Restauro Top – Apply in one or more layers from 5mm – 30mm. Should be applied at least 2mm above the finished surface to allow dressing back to match the surrounding stone.

KEIM Restauro Fuge – Press the prepared joint mortar firmly into the joint with a jointing tool. Should be applied proud of the stone surface and any excess then removed with a palette knife during setting.

Cleaning of tools

Clean immediately after use with water.

4 Packaging

30 kg sacks



STONE DECORATION – SOLID COLOUR

Once surfaces have been prepared and repaired using the KEIM Restauro system they can be painted using any of the opaque KEIM Mineral Paints systems, either external or internal, in a wide range of colours, if a solid paint finish is what is desired.

External KEIM paints –

KEIM Soldalit
KEIM Granital
KEIM Soldalit-ME
KEIM Twinstar

Internal KEIM paints –

KEIM Optil
KEIM Ecosil-ME
KEIM Innostar

For more detailed information about the different paint options please see brochures 'EXTERNAL PAINTS SYSTEMS' and 'INTERNAL PAINT SYSTEMS'.

If a solid opaque finish is not desired then we would recommend considering a natural colourwash effect such as KEIM Restauro Lasur or a clear protective finish such as KEIM Lotexan.

STONE DECORATION – NATURAL EFFECT

If a solid, opaque finish is not desired for stonework, then we would recommend our specialist stone colourwash system, KEIM Restauro Lasur.

KEIM Restauro Lasur can be applied onto stonework in a variety of colour shades and opacities to retain the look and feel of natural stone.

The KEIM Restauro Lasur finish provides a natural look that can be used on both new stonework and for blending in repairs.





BEFORE ▲

▼ AFTER



KEIM RESTAURO® LASUR

TECHNICAL INFORMATION

1 Field of application

Sol silicate based mineral paint system for use on stone surfaces to provide a colour wash or semi-transparent finish. Offers water repellency, vapour permeability and forms a chemical crystalline bond with the substrate.

2 Product properties

- Water vapour permeable, non film forming, and micro-porous
- Resists algal and fungal growth
- No solvents and plasticisers added
- Non flammable
- Lightfast
- Unifies colour and blends unsightly repairs
- Cradle to Cradle Certified®

Colour shades

In accordance with the KEIM Naturstein swatch, with specials available.

KEIM Restauro Lasur s_d : $\leq 0.01\text{m}$

VOC Content: 0-4g/lit VOC

3 Application instructions

Substrate preparation

All loose, flaking and unstable material must be identified and then thoroughly removed (not suitable for previously painted surfaces), all surfaces must be thoroughly washed down with clean cold water to remove all surface dirt and dust. When all surfaces are clean, sound, wind dry, dust free and free from all surface contaminants, decoration using KEIM Restauro Lasur may proceed.

Application

KEIM Restauro Lasur will enable a colourwash appearance to be applied to the stone; this can match the surface and be applied to minimise any surface variations or blemishes. The system will protect the substrate whilst still maintaining its feel and appearance.

KEIM Restauro Lasur should be applied by brush, it is important that a wet edge is kept at all times and that contractors work to a natural break line.

A typical specification would be a two coat KEIM Restauro Lasur system, the first coat to be KEIM Restauro Fixativ (clear priming coat), applied by brush and worked well into all surfaces. After a minimum period of 12 hours a final coat of KEIM Restauro Lasur in the chosen colour may be applied, diluted to the required level with KEIM Restauro Fixativ.

Site trials should be conducted to determine the number of coats and the amount of KEIM Restauro Fixativ required to obtain the desired opacity.

Consumption

For two coats between 0.1-0.2 lt/m² for KEIM Restauro Lasur and 0.1- 0.4 lt/m² KEIM Restauro Fixativ.

Consumption rates are offered for guideline purposes only and are quoted for smooth surfaces. Actual rates are the responsibility of the applicator. Project specifications should be referred to for specific rates.

Cleaning of tools

Clean immediately after use with water.

4 Packaging

5lt & 20lt containers



STONE TREATMENT – CLEAR COATING

If a clear, water repellent coating is required for stone we recommend the use of KEIM Lotexan. KEIM Lotexan is a water repellent siloxane based treatment specifically developed for use on stone.

When applied, KEIM Lotexan soaks into the substrate and, having a small molecular size, coats the pores of the stone. A chemical reaction takes place, creating the water shedding properties of the siloxane, imparting water repellence while maintaining vapour permeability.

KEIM Lotexan is a beneficial alternative to traditional silicone treatments which have a much larger molecular size and tend to fill the pores rather than coating them, reducing breathability.



KEIM LOTEXAN®

TECHNICAL INFORMATION

1 Field of application

KEIM Lotexan is a siloxane based water repellent impregnation to reduce the water absorption of natural stone. It can be used to protect all common kinds of natural stone from water, acid rain and atmospheric pollution.

2 Product properties

- Easy to apply
- Water vapour permeable
- Totally clear
- Surfaces show no sign of treatment

Colour shades

Clear

KEIM Lotexan s_d: 0.05m

3 Application instructions

Substrate preparation

All gaps, cracks and holes in the substrate must be filled prior to any further treatment. Any suspect mortar jointing should be raked out and re-instated where necessary. Any newly repaired areas must be allowed to dry out for a minimum period of 15 days prior to the application of KEIM Lotexan.

All surfaces should be washed down with clean cold water to remove all surface dirt and dust.

Application

KEIM Lotexan should be applied by low pressure spray or brush, working from the bottom of the substrate upwards, firstly in a horizontal manner. After a period of approximately 10 minutes a further application may be applied, again from bottom to top, this time in a vertical manner, thus ensuring that all facets of the substrate are well coated.

It is important that KEIM Lotexan is applied onto a dry surface and during a period of time of at least 2 hours when no rain is expected.

Consumption

Approx. 0.4lt/m² for two coats onto a smooth surface.

Consumption rates are offered for guideline purposes only and are quoted for smooth surfaces. Actual rates are the responsibility of the applicator. Project specifications should be referred to for specific rates.

Cleaning of tools

Clean immediately after use with solvent.

4 Packaging

5lt containers



A.D. 1816





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