

LPOC puts it to the test: Keim Mineral Paint



The LPOC is regularly asked about which are the most appropriate, sympathetic, or authentic products to use on a listed building; no more so than when it comes to painting external walls. The range of products to choose from today is extensive and issues of durability, breathability and compatibility with existing surfaces can be a little daunting to the listed property owner.

The latest 'LPOC puts it to the test' report relates to Keim Mineral Paint. I have known of Keim paints for over 30 years but I had never actually used their paint range. I was fortunate enough to meet one of Keim's technical representatives at an LPOC event and he in turn put me in touch with their Business Development Manager, Richard Perry. In time, Richard visited the house, prepared a specification and recommendations for the repainting and then revisited on occasions as I carried out the surface preparation and paint application.

My listed building has painted brick elevations and redecoration was well overdue. The house is of late-medieval origins but has undergone substantial alteration, extension and rebuilding during every one of the last five centuries. Its walls are built of flintwork,

exposed timber framing, brickwork, tile-hanging and render. In all, about a third of the external elevations are painted brickwork which were last decorated using a hydraulic lime based paint over a decade ago. The painted surface are irregular due to erosion of the brick faces and the mortar joints are soft and a little powdery in areas.

KEIM MINERAL PAINTS: SOME BACKGROUND

Keim Mineral Paints were developed over 140 years ago but they were not fully introduced into the UK until 1978. The paint is based on a potassium silicate binder which is highly resistant to weathering and creates a strong permanent bond between the paint and the underlying masonry substrate. It effectively becomes an integral part of the substrate, rather than just a surface coating, giving it unusual longevity and durability.

A big attraction for me was the paint's reputation for longevity. It is not uncommon for applications to last 20 to 30 years and there are examples which are considerably older. The murals on Stein am Rhein Town Hall, Switzerland, were painted with Keim paint over 100 years ago and are still in good condition and the murals in St Martin's Church, Blackheath in Surrey were painted in 1895. Richard Perry explains that he often revisits projects to give advice on repainting and finds himself saying that the original Keim paint is in good condition and just requires a good clean.



Left:
The finished job

WHAT THE MANUFACTURER SAYS:¹

- Because Keim paints use a potassium silicate binder they do not flake and the binder does not disintegrate under the effect of UV light. Consequently they are highly stable and able to resist the effects of acid rain, industrial pollution or alkaline attack.
- The alkaline nature of Keim Mineral Paint (11 to 13 on the pH scale) makes it resistant to the growth of fungi and algae spores.
- Unlike acrylic based paints, they have no residual electrostatic charge, therefore they do not attract dust.
- Keim Mineral Paints are water borne, odourless, non-toxic and manufactured from natural ingredients using a low energy manufacturing process. They contain no solvents or any petro-chemical derivatives. Consequently the paint has a good environmental profile. The basic raw ingredient is quartz or sand.
- Because the paints use light-fast mineral



pigments and binders which are unaffected by weathering and UV radiation they do not fade over time.

- The crystal structure of Keim Mineral Paints gives a high level of reflectance compared to oil-based paints.
- The paints are inherently non-combustible unlike synthetic paints which are manufactured from petrochemicals.
- The micro-crystalline nature of the paint creates finite spaces between adjacent crystals which allow the free passage of vapour; but prevent the ingress of driven rain. Consequently it is highly water vapour permeable (or breathable).
- Tools are washed in water:
- Keim Paints are suitable for use on brickwork, blockwork, concrete, all types of stone (including flint), terracotta, faience, render and even glass. They are not suited to use on plastic or metal.

MY EXPERIENCE

I embarked on preparing my walls in the autumn of 2018 under Richard Perry's watchful eye. Keim offer a list of contractors who are experienced in using their mineral paint system but I decided to do the redecoration myself.

As is so often the case the preparation took longer than I had anticipated partly because I needed to undertake some repointing, crack filling and a lot of cleaning with water and a bristle brush. Small cracks and blemishes were filled using Keim Spachtel which is a proprietary filler.

Richard Perry inspected the walls to check that they were ready for application of the Keim Mineral Paint system but they were not. He identified numerous areas where there were outbreaks of red algae on the surfaces. Rydophaedise, to give it its proper name, is a marine algae which is increasingly found on building surfaces in the south-east, possibly as a result of global warming. It reveals itself in little red spots that turn yellow when squashed under the thumb. Bleach, water and many more hours of bristle brushing was the prescribed remedy.

Having spent many hours removing the red algae I applied Keim Fixativ to consolidate some of the surfaces which were dusty and slightly friable and then Keim Algicid to kill any residual mould or fungal growth. Both were quick to apply using a garden spray.

Then I had to wait for the walls to dry to below 18% moisture content prior to painting. The weather closed in and I was forced to down tools with the onset of winter.

With renewed enthusiasm I picked up the project again in spring 2019. I applied the paint using a 4" masonry paint brush. The paint was of a creamy consistency, it was easily applied and provided good cover in just the one coat. A second coat was then applied to obtain the full protection from the system.

The end result is transformational and very pleasing aesthetically. It is reassuring to know that the solid brick walls are breathing in the way that they should and that they will



The National Trust chose Keim Mineral Paint to redecorate the Foreland lighthouse in Dover in 2014



Grade II listed building in Hampshire, recently painted in Keim Mineral Paint

actively shed rainwater in bouts of heavy rain. Only time will tell how long the paint will last until it requires redecoration but I will be disappointed if it does not live up to Keim's claims. I will make a point of monitoring it and will write an update in a few years' time.

What impressed me most about Keim's service was the hands on approach which they have when it comes to specifying the right product and overseeing the process. This is not a service for which they charge, but it could well help to avoid some of the pitfalls which may result in premature failure. Most people, even professional decorators, do not have the expertise to recognise or treat red algae or to check that the moisture content of a wall is below 18%. Having Richard Perry alongside to provide that high level professional advice was invaluable. 🌿

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Footnote ¹: The bullet points are taken directly from Keim's literature and their inclusion here has not been verified by the LPOC.