



KEIM Mineral Paints – Technical Digest

Cleanliness & Durability of Mineral Silicate Paints

1. Cleanliness

Once a surface has been painted, the type of paint material which has been used can contribute to keeping the surfaces looking clean and bright, or result in a premature build-up of dirt and dust, resulting in frequent cleaning and redecorating.

The tendency of coated surfaces to become soiled is influenced, apart from by condensation behaviour, by the static charging characteristics and thermoplastic properties of the binder. The organic synthetic resin/silicone resin binders in conventional acrylic film forming masonry paints become electrostatically charged in the wind due to friction and actually attract dirt particles onto themselves from the air. At higher temperatures, these binders can also exhibit thermoplastic behaviour, i.e. they become 'tacky', which creates ideal conditions for dirt particles to become stuck and collect in greater numbers on the surface. Paints with a water glass binder, such as Keim Mineral Paints are antistatic and non-thermoplastic. Over the long term, they therefore remain cleaner than organically bound paints.

2. Moisture Balance

Keim Mineral Paints extremely high permeability to water vapour is the result of the microcrystalline surface structure. This high water vapour permeability ensures that moisture present in the structure can quickly and straightforwardly be released to the outside. This is highly advantageous because moisture does not accumulate between the coating and substrate which can result in damage.

In building physics, the permeability of an exterior wall coating is the most important criteria in ensuring a balanced moisture level. In combination with low water absorption, which has long been standard with Keim silicate paints, this provides ideal protection from water and frost damage and from algae and fungal growth.

According to research, the condensation behaviour of exterior wall coatings is also a factor which crucially determines premature soiling and greying of a paint coating. Due to the characteristics of their binder, Keim mineral silicate coatings exhibit the best results with little formation of condensed moisture and, above all, the rapid drying which is essential. The risk of algae growth on Keim Mineral Paints is therefore greatly reduced, without any addition of highly toxic, leachable biocides.

Keim Paints are also inherently resistant to mould and fungal growth due to their high alkalinity, (pH is approximately 12.3), and will provide longterm resistance to mould and fungal growth. Keim paints are inorganic so there is nothing for algae to feed upon, preventing its growth and build up on the surfaces. Conventional film forming coatings are usually more acidic, closer to the middle of the PH scale and, being organic, provide a food source for fungus and algae spores.





3. Durability

With regards to durability and longevity, Keim Mineral Paints offer unparalleled performance due to the way in which they bond to the surface. Unlike a conventional film forming coating which merely sticks by adhesion to the substrate, Keim Mineral paints penetrate into the surface and chemically bond to it. This creates a permanent chemical bond which means the coating is an integral part of the surface, rather than being a film coating. There are examples in existence of the Keim Silicate Paint system lasting for periods in excess of 100 years even in the harsh climates of Southern Germany, Switzerland and Norway. Concerning the performance of the Keim system, all Keim Mineral Paints comply with the Germany Standard VOB/C Din 18363 2.4.1.

When there is a need from time to time, to clean the decorated areas in order to maintain satisfactory light reflectance values and a generally good aesthetic appearance, Keim Paints may be periodically power washed (using a fan nozzle), and are unaffected by detergents, giving a satisfactory long term performance.

For further information regarding Keim Mineral Paints please contact our sales office sales@keimpaints.co.uk or 01952 231250.

