



KEIM Mineral Paints – Technical Digest

Algae & Fungal Resistance of Mineral Paints

1. The Problem

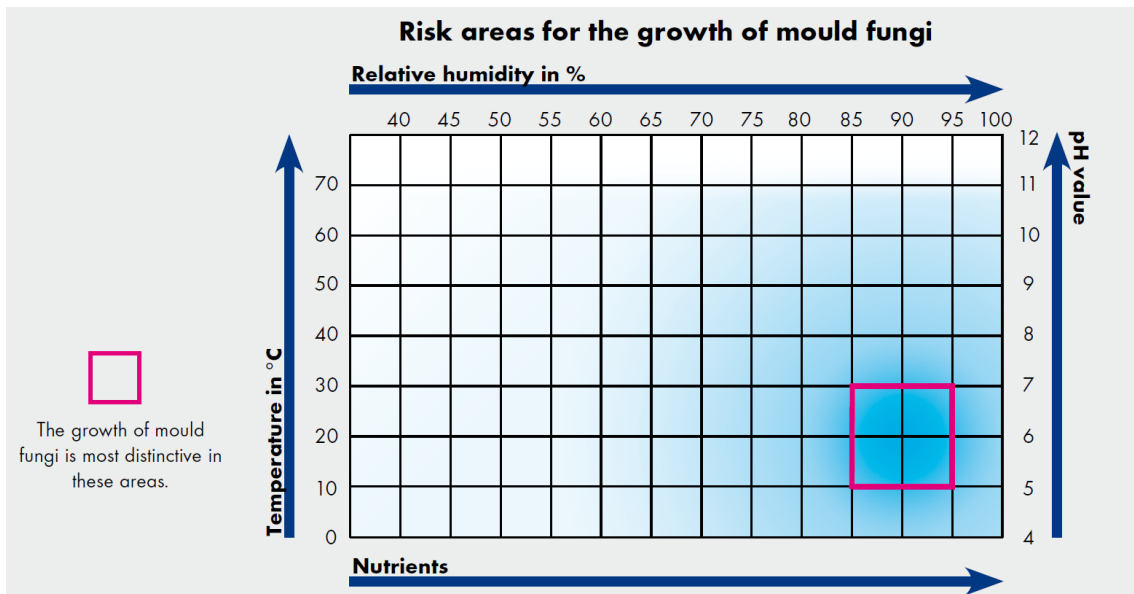
Algal and mould growth, including fungi and lichens, are an increasing problem in the UK on both the outside and inside of buildings, particularly on painted surfaces. For some buildings and areas the problem can be prolific, often due to a combination of environmental conditions and type of paint coatings. This is both aesthetically unappealing as well as potentially harmful, particularly indoors. There is much research and many opinions about the causes of, and treatments for, such issues, and the following is the opinion of Keim Mineral Paints.

Our climate is undoubtedly getting wetter and warmer which creates a more benign breeding environment for algae and mould spores. An adverse, and unseen consequence, of our efforts to reduce air pollution has also impacted the problem, as the reduction in the levels of pollution and resultant acid rain create a much more tolerant environment for propagation.

Whilst we want to tackle the problem effectively, labelling regulations and better understanding of how chemicals affect us as human beings has, over time, changed our perception and acceptance of potentially harmful additives in everyday products. Therefore the inclusion of chemical biocides, and the accompanying 'skull and cross bones' label is viewed as unacceptable, and we need to look at other ways of controlling and dealing with the problem.

2. The Solution

The inherent nature of Keim Mineral Paints ensures they are naturally mould and algae resistant. The chart below shows what factors influence mould and fungal growth, and the optimum growth conditions.





Alkalinity is a natural mould inhibitor. Optimum growth conditions for algae and mould are typically between pH 5-7, but they can grow between pH 3-9. The higher the pH of the surface the greater the resistance. Made using potassium silicate, Keim Mineral Paints are very highly alkaline (typically pH 11 or above) and therefore create an undesirable surface finish for spores to grow.

Algae and mould cannot live without a food source. Available nutrients are minimised by using a mineral paint as the paint itself is inorganic (i.e. does not contain organic nutrients – typical examples include cellulose, wood, wallpaper and other waterbased substances). Keim Mineral Paints are also antistatic and non-thermoplastic in nature and therefore, over the long term, they remain cleaner than organically bound paints (see 'Cleanliness & Durability Technical Digest' for more details).

Moisture is essential to mould and fungal growth and the high breathability of Keim Mineral Paints ensures the pores of the surface are not restricted and moisture vapour is not trapped behind the coating for prolonged periods.

Photocatalytic mineral paints also offer increased resistance through an active catalyst which helps to degrade surface contaminants (see 'Mineral Paints – The Photocatalytic Difference').

It is important to understand and bear in mind that mould, algae and fungus are natural, living organisms and therefore able to survive and adapt to all/any conditions.

Despite the inherent resistance of mineral paints to re-growth in some instances it may still occur. When this happens the growth needs to be periodically treated. Whilst Keim Mineral Paints are alkaline, do not contain nutrients and help control moisture balance; without periodic cleaning the surfaces themselves will start to build up a microscopic layer of contaminants, such as dirt/dust, which will provide an environment suitable for growth.

3. Keim Algicide-Plus

Keim Mineral Paints also offer a high performance, non-hazardous proprietary treatment, Keim Algicide Plus which can be used to increase protection and resistance.

Keim Algicide Plus is an acid free, aqueous cleaning agent with microbicidal action for remediation and cleaning of outdoor and indoor surfaces suffering from algal and fungal growth. Keim Algicide Plus can be used onto all mineral substrates and should be used as a pre-treatment prior to any decoration and used, as required, as a periodic treatment for badly affected areas. It can be used as both a cleaner (washed off after three hours) and a deterrent coating to prevent new growth (allowed to remain and dry on cleaned surfaces).

For further information regarding the all of features and benefits of Keim Mineral Paints please contact our sales office – sales@keimpaints.co.uk or 01952 231250.

