KEIM SOLDALIT®-ME

BIOCIDE FREE PHOTOCATALYTIC SILICATE PAINT

„Problems cannot be solved with the same mindset that created them.“
Albert Einstein

KEIM SOLDALIT®-ME – CLEAN IN EVERY RESPECT

PREVENTING ALGAE AND FUNGAL INFESTATION
Most insulated facades are affected by microbial growth, as algae and fungi encounter favourable growing conditions on these surfaces. Such facades are often coated with biocide containing paints. Biocides contained in these products are washed out by rain over time and pollute the environment.

AVOIDING AIR POLLUTION
Our modern-day environment is characterised by high traffic volumes, industrial mass production and high energy consumption. These factors are the main causes of man-made air pollution. Traffic plays a decisive role in this, as it pollutes our air with nitrogen oxides, carbon monoxide, sulphur dioxide and particulate matter. Studies show that pollution of the air we breathe with particulate matter and nitrogen oxides affects our health. In addition, nitrogen oxides play a significant role in the formation of ground-level ozone and acid rain and have a considerable impact on the environment.

A groundbreaking approach to preventing soiling and reducing air pollutants such as nitrogen oxides is the power of photocatalysis: clean air and clean facades due to innovative technology – KEIM relies on photocatalysis.

PHOTOKATALYSIS– NATURE LEADS THE WAY

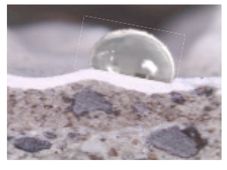
USING THE POWER OF THE SUN
Similar to photosynthesis in plants, photocatalysis also initiates a reaction process using light. While photosynthesis uses sunlight to build up a substance (glucose), photocatalysis breaks down or converts substances. The term photocatalysis describes a principle of action in which a substance (catalyst) is stimulated by light (photo) to trigger or accelerate a chemical reaction without being consumed itself.

A photocatalytically hydrophilic surface, in combination with the antistatic properties and low thermal plasticity of silicate coating systems, ensures long-term clean facade surfaces.

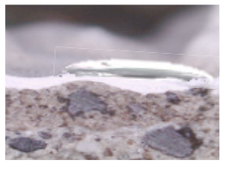
PHOTOCATALYSIS
→ FOR CLEAN FACADES
Under the influence of light, the photocatalyst leads to hydrophilic surface effects. Put simply, this means that the surface tension of the water on the façade is reduced and water droplets spread out to form a flat film. This promotes self-cleaning of the façade surfaces when they are wetted by rain or dew. The photocatalytically active surface makes it easier to remove dirt. It is simply washed off the façade.

Due to the larger evaporation surface, which absorbs water in a spread-out form, the drying speed is higher than with hydrophobic coatings. The extremely large specific surface area of a microporous silicate coating (compared to petrochemical based coatings) further increases the drying speed significantly. The overall drier surface provides unfavourable conditions for algae and fungal growth. Silicate coatings are antistatic and non-thermoplastic. This makes it difficult for dirt particles to adhere to the surface.

ADVANTAGE 1
CLEAN FACADES



Without photocatalyst

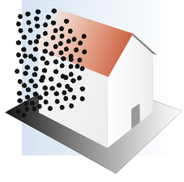


With photocatalyst

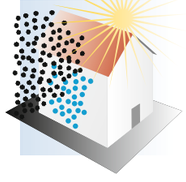
A photocatalytically active surface makes a valuable contribution to air purification – our contribution to a clean environment and healthy living spaces.

PHOTOCATALYSIS
→ FOR CLEAN AIR
Natural light exposure activates an innovative photocatalyst in the façade paint. It converts harmful nitrogen oxides in the air into harmless nitrate – and even produces oxygen in the process. Best of all, the effect is permanent – a lifelong effect with no loss of effectiveness.

ADVANTAGE 2
CLEAN AIR THROUGH THE MINOX EFFECT

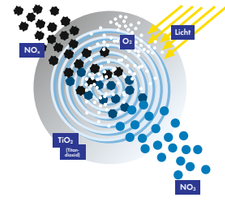


Nitrogen oxides accumulate on the surface of the paint.



When exposed to light, nitrogen oxides are converted into harmless nitrate (NO_3).
In addition, this reaction turns ozone into oxygen.

The easily soluble nitrate (NO_3) is then washed off the surface by rain.

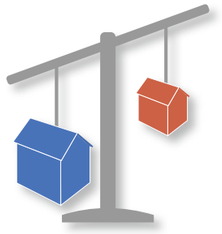


The titanium dioxide catalyst is not consumed. As long as the crystals are supplied with energy by electromagnetic waves (light), the process remains active.

PHOTOCATALYSIS IN COLOURS – OPPORTUNITY AND CHALLENGE

PHOTOCATALYTIC, ORGANICALLY BOUND PAINT

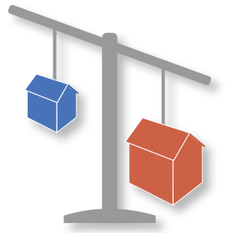
Activity
Life span



Either... good activity (sufficient pigment), but very reduced life span

PHOTOCATALYTIC, ORGANICALLY BOUND PAINT

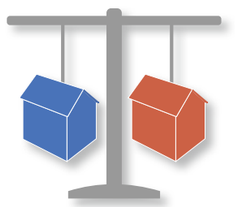
Activity
Life span



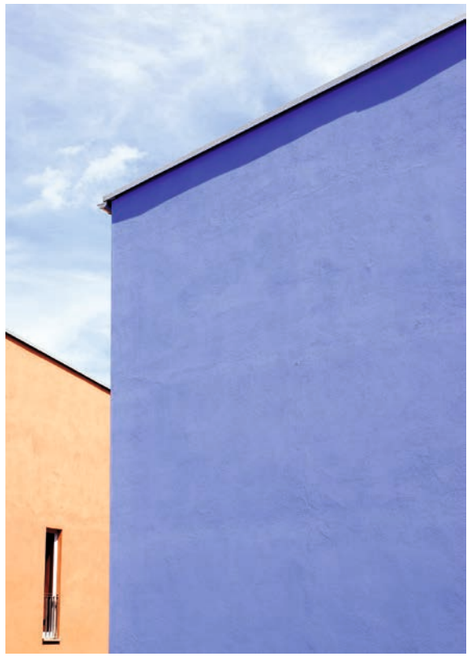
or... long life span, but reduced activity (too little pigment)

PHOTOCATALYTIC, SILICATE-BOUND PAINT

Activity
Life span



→ **Good life span, optimum activity**



Inorganic pigments are particularly suitable for photocatalytically effective and durable coatings..

LONG-TERM CLEANLINESS AND COLOUR STABILITY

Photocatalytically active paints can break down pollutants – a real plus for the environment and air quality. The catch: organic binders in petrochemical based paint systems are themselves susceptible to the process and degrade over time. The result: chalking, premature weathering and reduced life span.
Inorganic, silicate binders from KEIM are more robust – they remain unaffected by the photocatalyst which ensures stable, durable coatings.

KEIM SOLDALIT®-ME – SUSTAINABLE FACADE PROTECTION

KEIMFARBEN – EXPERIENCE PAYS OFF

KEIMFARBEN has been researching photocatalytic pigments that are permanently stable and efficient in paints for many years. In KEIM Soldalit-ME, selected photocatalysts are optimally integrated into a stable, inorganic binder matrix.
The result: photocatalytically effective high-performance coatings with extremely high colour stability and a pollutant-reducing effect – the so-called MiNOx effect („Minimises NOx"). KEIM Soldalit-ME thus combines sustainable facade protection with active environmental benefits.

KEIM SOLDALIT-ME – BECAUSE IT MAKES SENSE!

The photocatalytic effect also helps to prevent dirt and soiling, as microorganisms cannot find any nutrients. The silicate surface remains clean without the use of biocides – a real plus for people and the environment.

Unlike organic binders, which are attacked and weakened by photocatalysis, inorganic binders are stable and durable.

KEIM Soldalit®-ME ensures a long-term clean, colour-stable façade and an improvement in air quality!

full scope CERTIFIED cradle to cradle silver version 3.1 C2CCERTIFIED.ORG

material health CERTIFIED cradle to cradle gold version 3.1 C2CCERTIFIED.ORG

MiNOx Effect minimiert NOx

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