

MOLD REMEDIATION WITH KÖSTER HYDROSILICATE BOARDS



How does mold develop?

Often mold develops in living areas such as bathrooms, kitchens, or bedrooms. To understand the causes of mold growth, you have to understand the determining factors:

1) Moisture and temperature.

Moisture serves the mold spores as the basis for germination and promotes the growth of micro-organisms. Without moisture there is no mold growth.

Besides moisture there must be a certain temperature level for the mold spores to germinate and form mycelia. The determining factor is the humidity. At higher temperatures the air can absorb more moisture than at lower



The rate of growth of various sorts of molds varies depending on the presence of these main factors. In ideal conditions the growth and spread is pronounced, in bad conditions the

temperatures. When warm, moist air comes in contact with a poorly insulated, cold construction member it can lead to condensation- the most common cause for mold growth in living areas.

2) pH value and nutrients

Many popular building materials with low pH values (for example wallpaper) offer a nutrient rich breeding ground for the growth and development of mold. Mold grows best at a pH between 3 and 9. Most common construction materials have a pH value between 5 and 8 and therefore offer an ideal environment for mold growth



growth can be completely stopped. Especially vulnerable are rooms and construction members which are in contact with moisture, are poorly ventilated, or insufficiently insulated.

Can mold prone walls be effectively protected?

An effective system to stop mold should take the important determining factors moisture, temperature, pH and nutrients into consideration.

A basic principle for fighting mold is to transport the moisture out of the structure by regularly ventilating. An anti mold system must also be able to absorb moisture vapor during peak periods, store it, and let it slowly diffuse back when the relative humidity drops. A good insulation

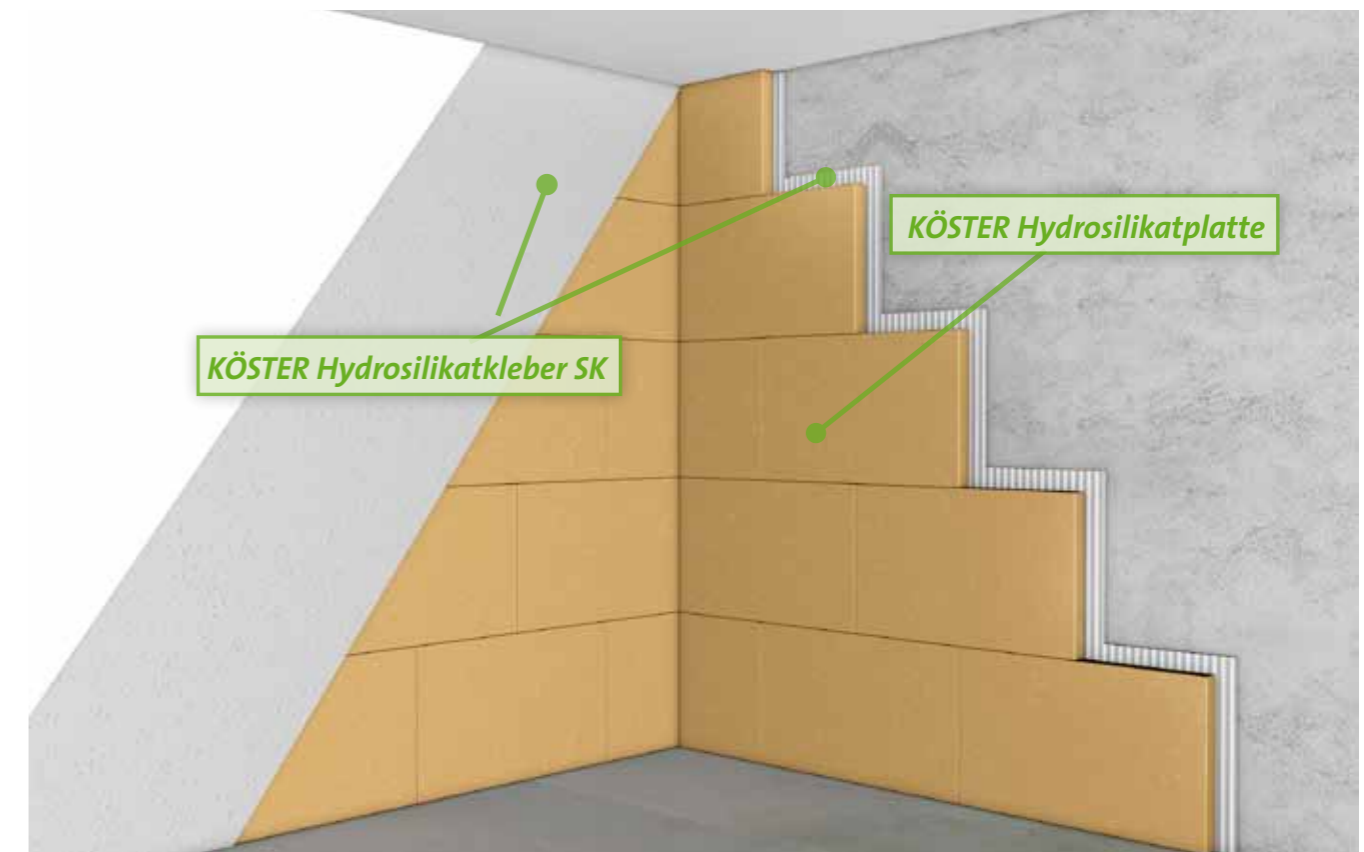
can help significantly lower the danger of mold growth. Avoiding thermal bridges reduces the development of condensate and denies the mold spores a source of nutrients.

High alkalinity and a low moisture uptake of the construction materials deny the mold any form of sustenance and stop the undesirable growth of mold spores.

The KÖSTER Hydrosilicate Board System

The KÖSTER Hydrosilicate Board System is a premium yet easy to install total system

for renovating mold infested rooms.



The System components



KÖSTER Hydrosilicate Boards are delivered in thicknesses of 25 and 50 mm, and in the size 580 mm x 380 mm.

The boards are made from a highly porous, high alkalinity, purely mineral material. This provides many advantages. The alkaline base material creates a natural environment in which mold cannot grow and combines environmental friendliness with excellent insulation characteristics.



The KÖSTER Hydrosilicate Tapered Board is a special designed board that prevents thermal bridges between the external and the internal walls or the ceiling. It is delivered in the size 500 x 380 x 60 to 20 mm.



KÖSTER Hydrosilicate Adhesive SK is delivered in 20 kg bags and only has to be mixed with water.

The Adhesive has a white color and a pot life of approximately 45 minutes. Besides gluing the boards to the substrate, KÖSTER Hydrosilicate Adhesive SK is also used for filling and leveling the surface.

The KÖSTER Hydrosilicate Board - mold remediation with insulative characteristics

KÖSTER Hydrosilicate boards inhibit mold growth by improving the characteristics of modern dwellings; high humidity, high temperatures, and low surface pH values.

The hydrophobic design of the material and a pH value of 9.5 inhibit the creation of a "mold friendly" environment in the building material. The germination process of the spores is cut off.

On top of that, KÖSTER Hydrosilicate Boards actively regulate the climate. A porosity of over 90% makes the boards very open to vapor diffusion and allows for water vapor to be taken up and stored. When heating or ventilating, the relative humidity in the room sinks and the boards slowly diffuse the moisture back into the surrounding area. This not only gives security

against mold formation, it also creates a stable and comfortable living environment.

The special structure of the material also has the positive side effect of being a supplemental insulation from the inside. Rooms that have been renovated with KÖSTER Hydrosilicate Boards warm up considerably faster and save money on heating bills. In this way a building can be renovated without a cost intensive renovation of the façade (for example with an external thermal insulation composite system, (ETIC System), and the value of the building is increased.

KÖSTER Hydrosilicate Boards are fast and easy to install. A decorative final coating that is open to vapor diffusion can be applied after 24 hours.

All advantages of the system at a glance

- High alkalinity (pH value 9.5)
- Always dry surface
- High resistance to aging
- Hydrophobic material (Water absorption $2.1 - 2.4 \text{ kg} / \text{m}^2 \cdot \text{h}^{0.5}$)
- Suitable for all breathable surface coatings
- Open to vapor diffusion (porosity > 90 vol %)
- Regulates moisture
- Faster heating of room
- Good insulative values (approx. $0.0473 \text{ W} / \text{mK}$) reduces heating costs
- Purely mineral system, easily recycled and eco-friendly
- Easy installation due to handy size
- Reduces condensation
- Creates a pleasant and healthy living environment



Safe and easy installation



Old wall coverings and bond inhibiting substances such as wallpaper, gypsum residues, paint or insulation must be completely removed.

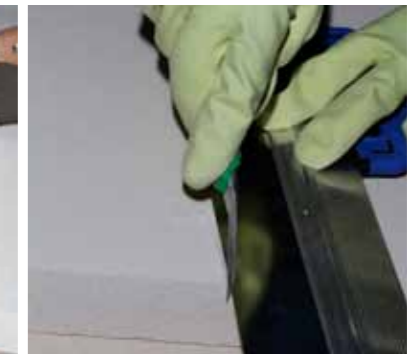
Absorbent substrates are primed with KÖSTER Polysil® TG 500. Irregularities and holes in the surface smaller than 5 mm can be closed with KÖSTER Hydrosilicate Adhesive SK. Larger surface defects can be repaired using KÖSTER Repair Mortar mixed with 20% KÖSTER SB Bonding Emulsion added to the mixing water. Moisture entering the wall due to capillary wicking moisture (rising damp) or moisture entering from the rear of the wall must be stopped.



After measuring and marking, the KÖSTER Hydrosilicate Boards are easily cut.



The Boards are cut using a common handsaw.



Alternatively the boards can be cut with a utility knife drawn along a steel edge.



Each bag of KÖSTER Hydrosilicate Adhesive SK is mixed with approximately 5.2 liters of water using a slowly rotating electrical mixer into a homogenous, lump free consistency.



Apply the KÖSTER Hydrosilicate Adhesive to the substrate with a 8 mm notched trowel fully covering the board area. The boards and the butted joints must be completely glued.



The KÖSTER Hydrosilicate Boards can now be pressed onto the wall and leveled.





A bead of KÖSTER Hydrosilicate Adhesive SK is applied along edges of the boards to make sure that the joints are fully filled.



After the KÖSTER Hydrosilicate boards have been applied the surface can be sanded smooth. Subsequently the whole area is plastered with a layer of KÖSTER Hydrosilicate Adhesive SK in a



maximum thickness of 2 mm. In normal room conditions and with good air circulation the surface can be decorated after 24 hours with breathable materials.



Solutions for details such as jambs and soffits with KÖSTER Hydrosilicate Boards



For detailed areas such as jambs and soffits around windows and doors that won't allow using the 50 mm thick boards, 25 mm



boards are also available. These are applied flush to the previously installed wall boards and offer an optimal finish.



Exterior corners should be protected by installing a corner profile.

Wicking moisture (rising damp)

For an effective and enduring restoration it is important that all moisture rising through the wall or entering through the back of the wall is recognized and stopped. It is therefore important to seek professional advice before beginning any restoration work. An experienced professional can recognize the diverse causes of the damage and can suggest the proper remedial measures.

Wicking moisture or rising damp is among the most frequently encountered causes of damage to masonry walls. It is caused by continual water transport through the capillaries of the masonry against gravity. The resulting saturation of the masonry not only results in spalling of the plaster and unsightly discoloration, but it is also an ideal medium for the growth of mold.

For over 25 years KÖSTER offers an innovative system for the retroactive installation of horizontal barriers against capillary rising moisture in walls: the KÖSTER Suction Angle System with KÖSTER Crisin® 76

KÖSTER Crisin® 76 is a very thin fluid that enters the capillaries, plugs them and makes the building material hydrophobic.



Profit from our experience:

When you would like to quickly and selectively inform yourself about special fields of appli-

cation, the standard references from KÖSTER Waterproofing Systems will surely help:



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Die KÖSTER System brochures



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