MOULD FUNGI INDOORS

EFFECTIVE PREVENTION, SUSTAINABLE REMEDIATION
KEIM MYCAL®-SYSTEM

OUR SOLUTION – KEIM MYCAL®-SYSTEM

KEIM IS THE IDEAL PARTNER TO HELP WITH YOUR MOULD PROBLEM

A sustainable mould remediation always requires to fight the source and to remedy the damage. Depending on the extent of the damage and the risk potential, each individual case must be examined and suitable measures for repair must be determined. The use of biocidal products should be carefully considered for indoor use, as they may have a health hazard.

KEIM Mycal mould remediation system consists of various healthy, mineral, individual products, which provide individually adapted remediation options in various combinations. The best choice for any case!

3 TOP SOLUTIONS FOR EVERY MOULD PREVENTION AND REMEDIATION

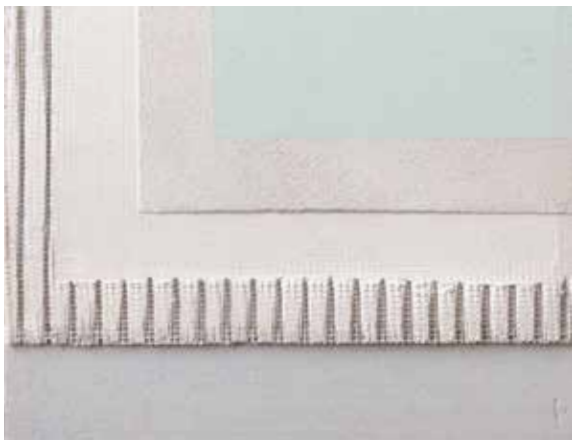
KEIM's product portfolio for the elimination or prevention of mould infestation includes a variety of intelligent solutions, making every mould problem simple and easy and, above all, safe to handle. Three KEIM core products are essential for every renovation:

KEIM MYCAL®-TOP, the highly specialised silicate interior paint is permeable and moisture regulating and, due to its mineral alkaline formulation, does not provide a nutrient base for new mould growth. It acts mould-inhibiting in a natural way.

KEIM MYCAL®-POR, the mineral, hydroactive, specialty lime render for interior use is our all-rounder. Use it as a sorption and moisture regulating alkali depot for gluing, reinforcing and rendering or simply as a base coat render. Just one for all.

KEIM MYCAL®-CS-PLATTE, the light-weight hydroactive calcium silicate panel to increase the wall surface temperature and to buffer temporarily high moisture loads. For a healthy indoor climate.

You can see the complete KEIM Mycal-System on page 10 and 11.



KEIM Mycal standard system structure.

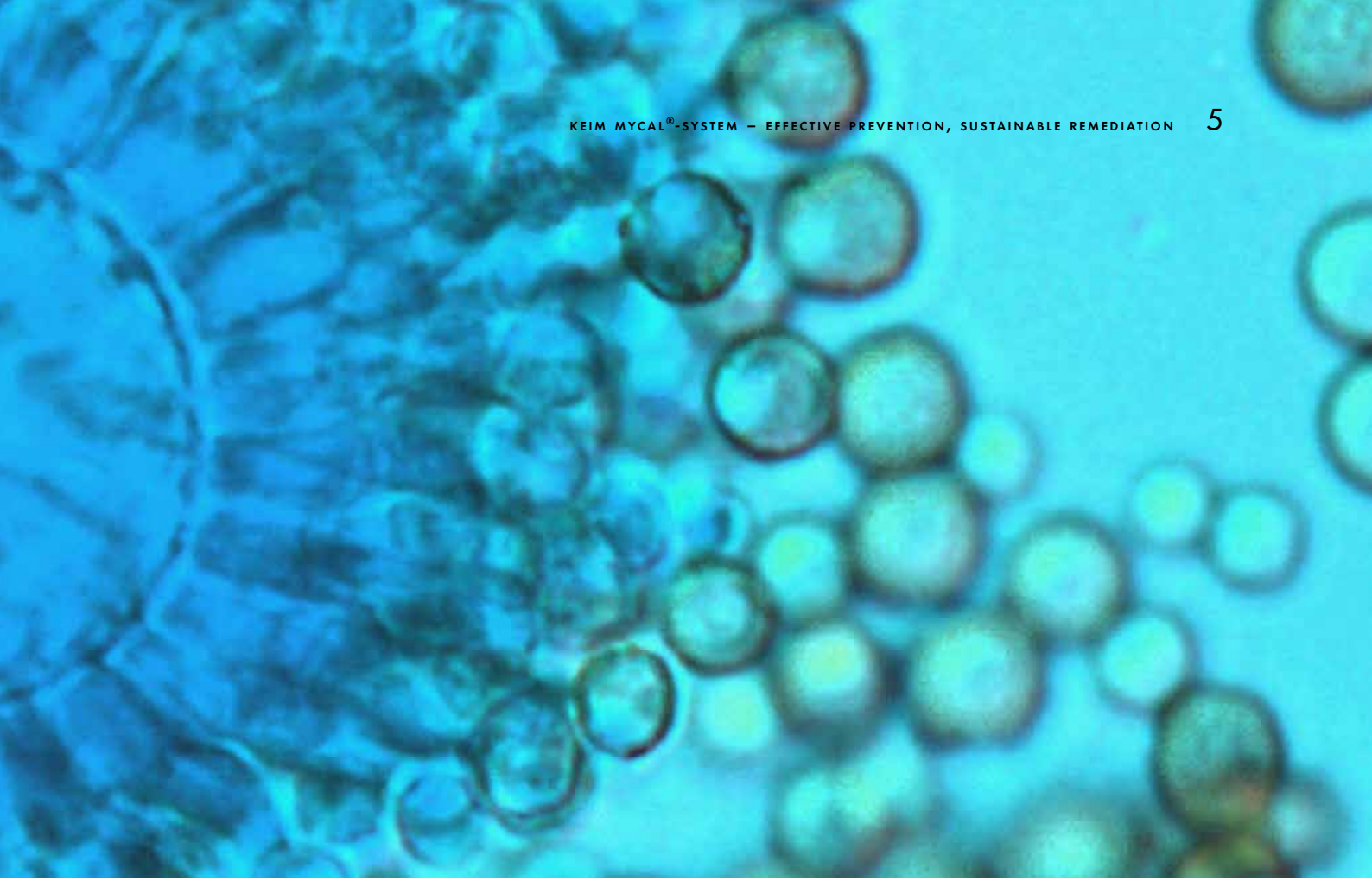
WHAT IS MOULD?

DEFINITION
Mould fungi are everywhere. They form an important ecological component in our natural environment, because they break down organic substances and thus make them accessible to plants as a source of nutrients. They usually reproduce asexually through spores that are released into the air.

In the growth phase, the spores germinate and form cell threads, so-called hyphae. Their entirety is called mycelium. The mould fungus spores, which become visible due to their colouring and their occurrence in large numbers e.g. as mould stains, then quickly colonise new breeding grounds again and multiply explosively under suitable conditions.

"The use of mineral and capillary-active products results in fast-drying surfaces which remove the mould's basis of existence. It is as simple as that!"

Mould fungi occur in different forms. The presence of moisture and organic material determines the intensity of infestation.



HEALTH RISKS

Microorganisms such as fungi and bacteria are a natural part of our environment and are normally tolerated by humans without noticeable reactions. The size of the spores is usually between 3 and 20 µm. They are therefore so small that they can be inhaled by humans or transported over long distances with the air. Spores, mycotoxins (the metabolic products of moulds) and other mould constituents can be harmful to the human body.

If the mould concentration exceeds a certain level, serious health problems for the human being can occur. An increased presence of mould fungus indoors can cause a number of serious diseases. Respiratory diseases, asthma, allergies, susceptibility to infections, but also fatigue, headaches, skin and eye irritations are only some of the health problems that can be caused by mould.

Health burdens should not be underestimated.

EVALUATION AND ASSESSMENT

To evaluate the health risks resulting from microbial infestation, various factors have to be considered. It is not enough to include just the size of the infested area or the type and use of the contaminated rooms to assess the risk. Rather, the type of mould, the complete building situation and the constitution of the persons affected are also decisive in order to make statements about the actual health risk.

WHAT CAUSES MOULD?

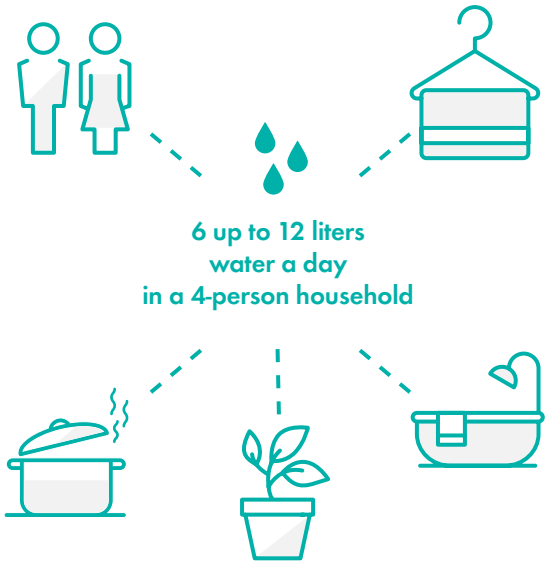
Especially in modern, heat-insulated apartments without natural air circulation, regular ventilation is necessary.

IDENTIFY THE CAUSES

One of the crucial factors for mould growth is moisture. Moisture can, for example, originate from the building (e.g. due to leaks, insufficient water pipe system, thermal bridges) or be caused by the room user himself. Professional on-site measures and a sensible behaviour of how to use and live in rooms must work together to keep living spaces free of mould growth in the long term. The use of mineral, hydroactive building materials, which absorb the moisture at peak loads, can have a supplementary effect.

For this reason, mould damages require a detailed assessment of the overall situation, the elimination of the causes and appropriate measures resulting from this. Due to the many different influencing factors and damage situations, there is no standard procedure for the renovation of mould infestation in living spaces. Our proven KEIM Mycal-System provides mineral and capillary-active products for quick-drying, alkaline surfaces for almost any individual situation.

MOISTURE SOURCES IN APARTMENTS



If you forget to air the rooms for two days only, there are at least 12 litres of water in the air. This is a lot of moisture that can condense on the walls of your home.

PROPER VENTILATION

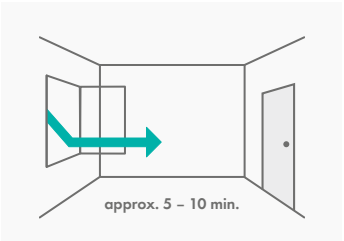
CHECK AIR HUMIDITY

Correct ventilation is the most effective means of removing moisture from living spaces and thus preventing mould growth. Free ventilation, i.e. opening the windows, is still of central importance. But correct ventilation must be understood. The most effective ventilation method, cross-ventilation, is not always advisable. The necessary exchange of air is determined by the size of the room, its use and the temperature. Modern ventilation concepts support the ventilation of living space autonomously, sometimes even including heat recovery.

In order to control the air humidity and use free ventilation in a targeted manner, the following instructions are recommended:

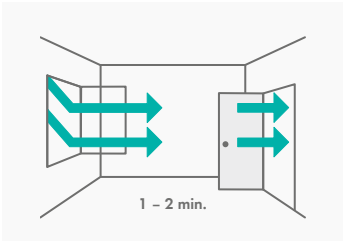
- Use of moisture meters (thermo-hygrometers)
- Constant tempering of the individual living zones (bedroom approx. 18 °C, living room approx. 19 - 20 °C, bathroom approx. 20 °C)
- No furniture along exterior walls
- Use of capillary-active mineral building materials on interior walls and ceilings

A healthy room climate creates an atmosphere of well-being.



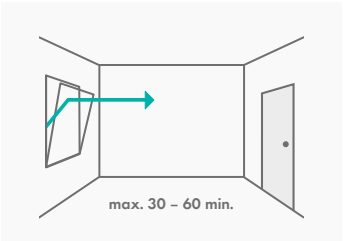
Ventilation with wide open windows

In order to reduce the humidity in the room, this kind of airing (5 - 10 min.) should be carried out several times a day. Note: Cool cellar rooms should not be ventilated in summer or only in the early morning hours.



Cross ventilation

Cross-ventilation is particularly effective, but only rooms with comparable humidity and temperature conditions should be cross-ventilated (1 - 2 min.). Note: Never cross-ventilate a warm, damp bathroom with a cool bedroom!



Tilted window ventilation

In individual cases, this ventilation (max. 30 - 60 min) may also be useful (provided that the tilt angles are suitable). Note: This will cool down the reveals considerably and a lot of heating energy is lost.

PREVENTION AND REMEDIATION

INFLUENCE MOULD GROWTH

The growth of mould fungi is mainly determined by the factors moisture, nutrient supply, temperature and the pH-value of the substrate. Mould fungi are true survivors by nature - they retreat into a dormant stage during dryness and become active again when conditions change. Mould also grows on materials or surfaces that are not visibly wet since surface moisture is sufficient.

Optimal growth conditions for almost all indoor-relevant fungal species range between 80 % and 95 % relative surface humidity. This moisture load does not only occur below the dew point due to constructional defects, but oftentimes much earlier.

"I can provide my customers with efficient and sustainable mould remediation and safe protection thanks to the KEIM Mycal-System."

Anton Fiener, professional painter in Augsburg

MOULD REMEDIATION WITH SYSTEM

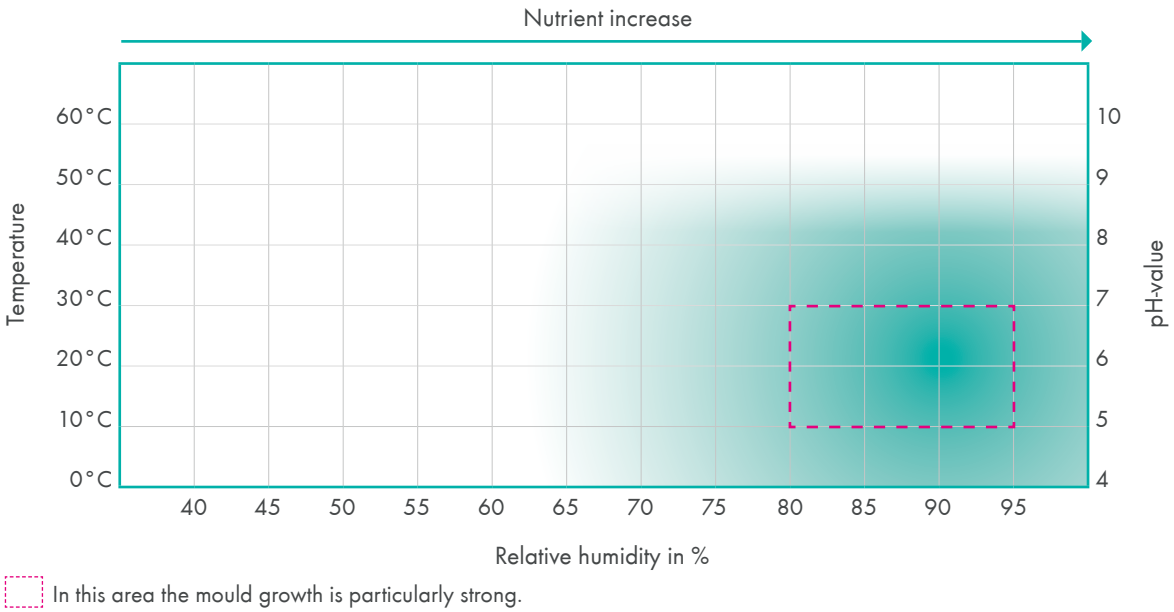
To remedy mould damages in interior spaces is an interdisciplinary task and should always be carried out in cooperation between the different trades and only by qualified companies. Decisive for further measures is the extent of the risk potential of the affected area.

Assessment criteria:

- Size of the infested area
- Intensity and depth of the infestationty
- Type of space use
- Probability of spore release during remediation work
- Health state of the user

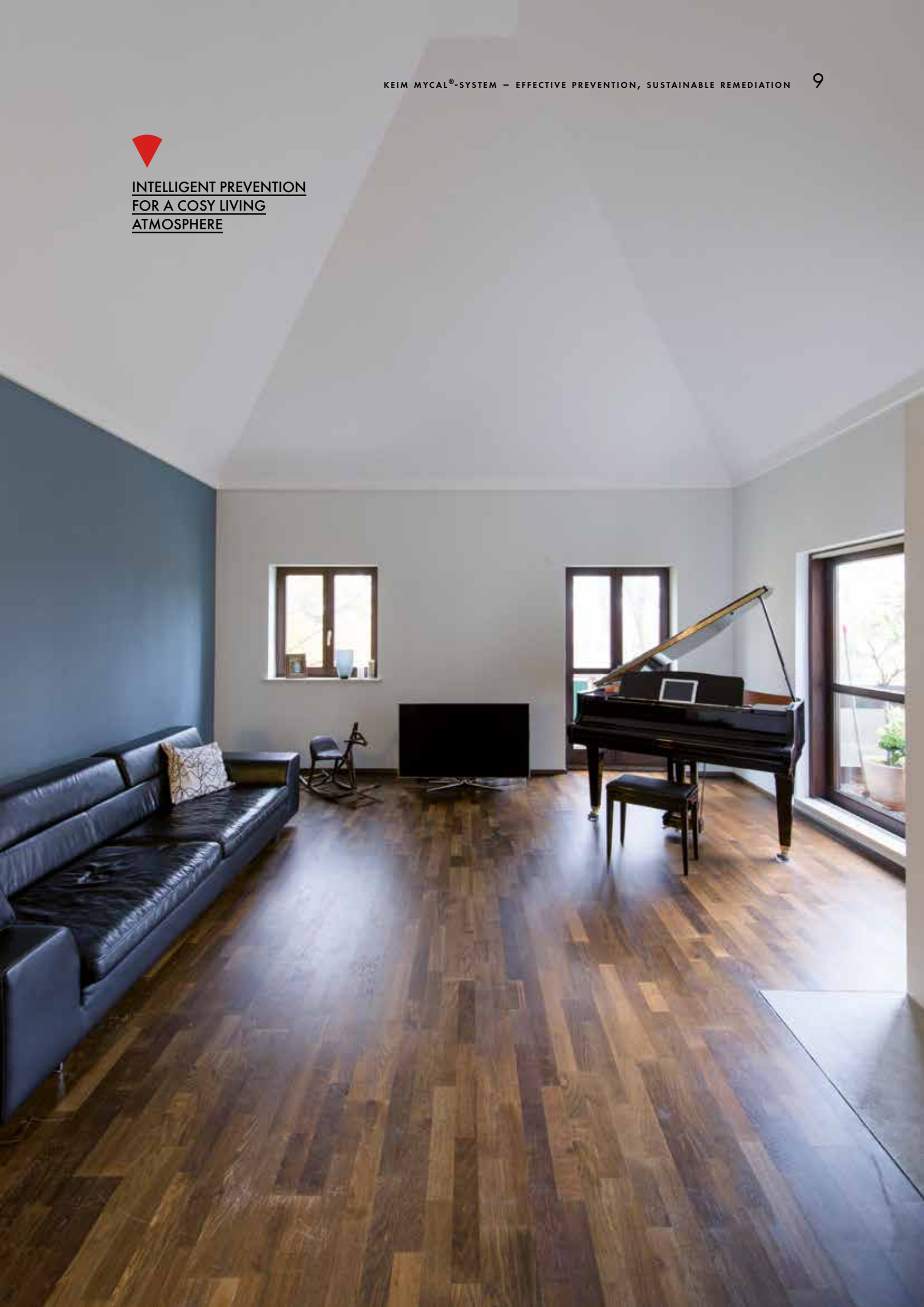
The types of mould, the duration of the remediation activities and the planned working procedures are also included in the risk assessment. In the final risk assessment, the risk is divided into three categories from increased to very high risk. The appropriate remediation and protective measures are to be derived from this assessment.

RISK AREA MOULD GROWTH



In this area the mould growth is particularly strong.

INTELLIGENT PREVENTION FOR A COSY LIVING ATMOSPHERE



BEST CHOICE: KEIM MYCAL®-SYSTEM

HYDROACTIVE – MINERAL – BIOCIDE-FREE

KEIM MYCAL®-FIX
Spore binder

Silicate pretreatment agent to bind fungal spores.

Spore release is the biggest risk factor while repairing the damage. It is a hazard for processors and users of living space and often the cause of consequential damage due to secondary contamination. Flying fungal spores must be avoided in any case during the renovation of mould-infested areas.

- Binds spores on the building material surface.
- Application prior to the removal of the mould infested wall building material.
- Silicate, alkaline and permeable. Plus, the high pH-value acts anti-mould.
- Can also be used for priming KEIM Mycal-CS-Platten.

KEIM MYCAL®-EX
Mould remover

Chlorine-free, aqueous oxidising agent for the pretreatment of microbially or residual loaded interior wall surfaces.

Careful cleaning of surfaces contaminated with mould is a basic prerequisite for long-term renovation. KEIM Mycal-Ex is an ecologically sound alternative to products containing chlorine or biocides.

- Aqueous
- Chlorine-free – reacts to water and oxygen
- High oxidative effect
- Ecologically compatible, because residue-free
- Highly permeable
- Concentrate

KEIM Mycal®-XO
Ready-for-use, aqueous oxidising agent (5% active substance).

KEIM MYCAL®-TOP
Mould remediation paint

Highly specialised interior silicate paint with different effect approaches against mould infestation.

Particularly suited for high-quality, opaque coatings in interior rooms that are prone to mould growth. The enormous diffusion potential and moisture regulating properties provide dry walls. High alkalinity counteracts new infestation. The inorganic structure demonstrably offers mould fungi no nutrient base.

- With photocatalytic effect: breaks down organic substances and thus reduces the nutrient base for mould.
- No fungicides or solvents added
- Wet abrasion class 1
- Suitable for allergy sufferers (according to test certificate)
- Officially recommended by the Sentinel Haus Institute.

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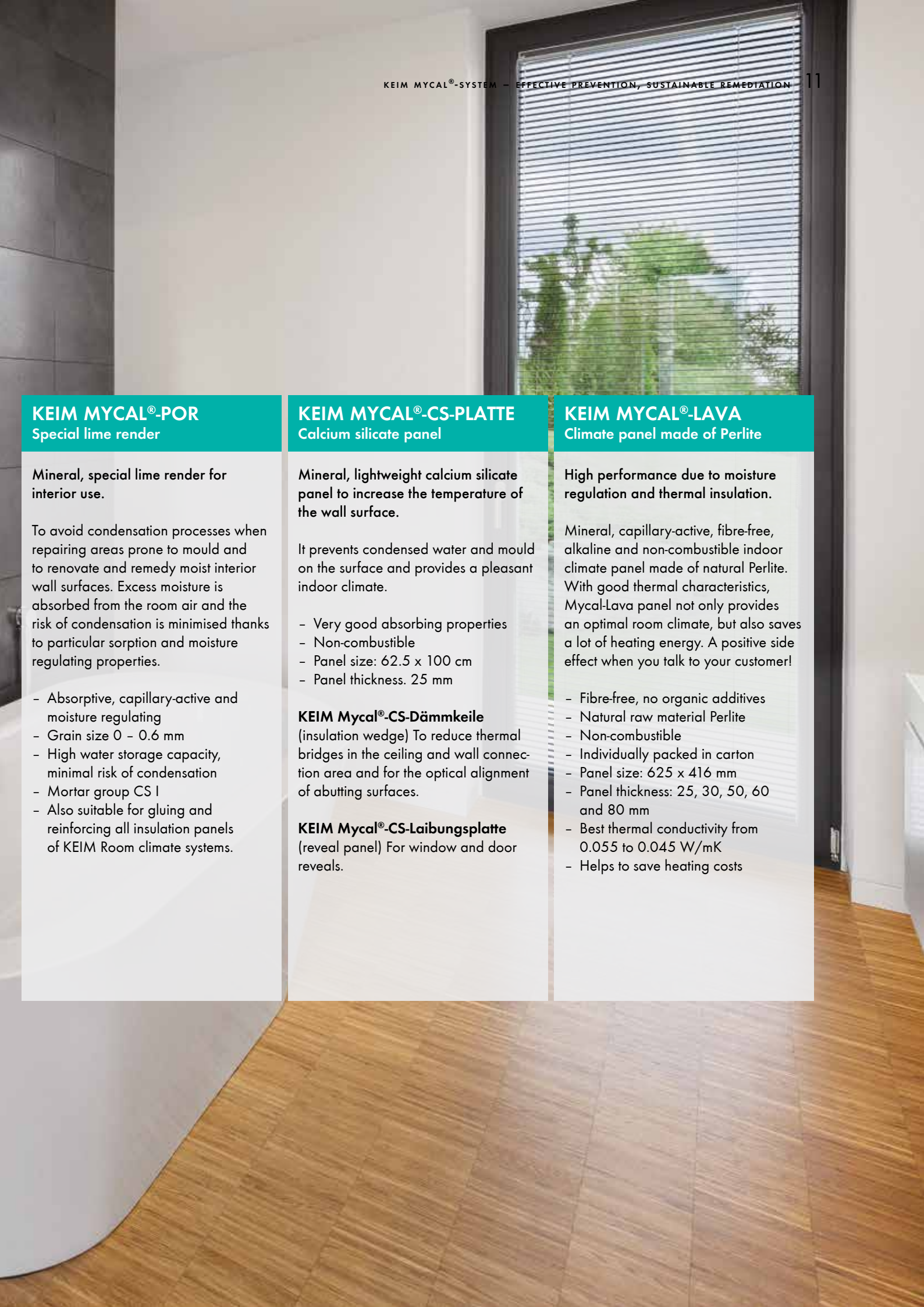

KEIM MYCAL®-POR
Special lime render

Mineral, special lime render for interior use.

To avoid condensation processes when repairing areas prone to mould and to renovate and remedy moist interior wall surfaces. Excess moisture is absorbed from the room air and the risk of condensation is minimised thanks to particular sorption and moisture regulating properties.

- Absorptive, capillary-active and moisture regulating
- Grain size 0 – 0.6 mm
- High water storage capacity, minimal risk of condensation
- Mortar group CS I
- Also suitable for gluing and reinforcing all insulation panels of KEIM Room climate systems.

KEIM MYCAL®-CS-PLATTE
Calcium silicate panel

Mineral, lightweight calcium silicate panel to increase the temperature of the wall surface.

It prevents condensed water and mould on the surface and provides a pleasant indoor climate.

- Very good absorbing properties
- Non-combustible
- Panel size: 62.5 x 100 cm
- Panel thickness. 25 mm

KEIM Mycal®-CS-Dämmkeile
(insulation wedge) To reduce thermal bridges in the ceiling and wall connection area and for the optical alignment of abutting surfaces.

KEIM Mycal®-CS-Laibungsplatte
(reveal panel) For window and door reveals.

KEIM MYCAL®-LAVA
Climate panel made of Perlite

High performance due to moisture regulation and thermal insulation.

Mineral, capillary-active, fibre-free, alkaline and non-combustible indoor climate panel made of natural Perlite. With good thermal characteristics, Mycal-Lava panel not only provides an optimal room climate, but also saves a lot of heating energy. A positive side effect when you talk to your customer!

- Fibre-free, no organic additives
- Natural raw material Perlite
- Non-combustible
- Individually packed in carton
- Panel size: 625 x 416 mm
- Panel thickness: 25, 30, 50, 60 and 80 mm
- Best thermal conductivity from 0.055 to 0.045 W/mK
- Helps to save heating costs

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