

KEIM



RESTORING WATER DAMAGE – BUT DOING IT PROPERLY!

EFFECTIVE SOLUTIONS FOR INSIDE AND OUTSIDE

FLOOD DAMAGE – MORE THAN JUST WET WALLS

Man is powerless against the forces of nature, such as heavy rain and floods; the basement and ground floor are quickly flooded. When the water recedes, the true extent of the damage to the building comes to light. Even though the first impulse may be to remove the damage quickly, it is important to approach such restoration work calmly and properly, and to ensure long-term, sustainable drying of all parts of the building.

DAMAGE ASSESSMENT – THIS IS WHAT COUNTS

FLOOD DAMAGE – NOW WHAT?

The rain subsides and the floodwaters recede, leaving behind a picture of devastation. After the initial clean-up work, the victims are faced with the question of how to repair their muddy, dirty houses and homes. Pollution is a relatively minor issue, compared to the hazards of possible contamination by pollutants, heating oil and faeces with subsequent infestation of surfaces by mould and bacteria. Dirt and moisture provide the ideal breeding ground for their growth.

FIRST STEPS

Particularly where major damage is concerned, it is advisable to call in experts to assess the extent of the damage and to develop a concept for how to proceed. The handling of pollutants brought in and released by the flood is a particularly important aspect for sustainable drying and restoration of a building. Depending on the damage status, render, flooring systems and insulation must be removed and the exposed walls and floors cleaned and disinfected. During reconstruction, only cement-bound and mineral materials should be used due to the residual moisture in the building.

INSPECTION BY EXPERTS, DAMAGE ANALYSIS

Incoming water can wash sand and gravel out of the ground. The consequence: subsidence of the foundations and settlement cracks in the walls. The stability of the building should therefore be examined by experts first.

1



CLEANING, DRYING AND AIRING THE BUILDING

Damp household goods, wallpaper and gypsum plaster must be removed. The use of dehumidifiers inside is generally recommended to accelerate the drying process.

2



DAMAGE ASSESSMENT

Exterior and interior walls must be inspected by experts for damage to paintwork and render, moisture and salt loads, mould infestation and cracks. Thorough damage analysis entails removing the wall structure completely up to one metre above the damage line.

3



IDENTIFYING, EVALUATING AND ASSESSING DAMAGE SYMPTOMS:



FLOODING AND THE CONSEQUENCES

When flood damage has occurred, the masonry, wooden structures and renders must be presumed to have absorbed large quantities of water which will take months or years to dry completely. There is always a risk of moisture-related consequential damage throughout the entire drying process.

A wide variety of damage symptoms may appear: cracks and spalling, moisture or salt damage, and mould formation.

NO MISTAKES DURING RESTORATION

It is generally advisable to use dehumidifiers to accelerate the drying of interior rooms. Furthermore, under no circumstances should the renovation work prevent the soaked substances from drying. Visual “concealment” of moisture problems with dense emulsion products may take its toll.

Permanent damage often only occurs when moisture is “trapped” in the masonry; this may possibly destroy valuable building fabric, while mould formation may have health consequences.

VAPOUR-PERMEABLE PRODUCTS

This is why only vapour-permeable products such as silicate paints or moisture-regulating renders should be used when restoring water damage. The structure of vapour-permeable renders and paints is engineered for particularly fast evaporation of water on the surface. Furthermore, salts can also recrystallise without causing any damage.

CRACKS AND SPALLING



After the water has been pumped out, if cracks and/or spalling are visible on load-bearing and non-load-bearing structural components, then a structural engineer should assess the damage. If only the render has been damaged but the structure is still sound, in many cases the wall can be plastered over with suitable render material.

MOULD



Visible mould after water damage is often only the tip of the iceberg. Microbiological analysis is therefore advisable prior to restoration. This provides the basis for developing and implementing a suitable mould remediation concept. Experts generally advise against using fungicides indoors.

SALT DAMAGE



If water penetrates the masonry, salts are often brought to the surface. These salts recrystallise and cause “efflorescence”. The result is unsightly, usually white or yellowish stains on wallpaper or render. Efflorescence and crystallisation cause spalling.

MOISTURE DAMAGE



Increased moisture values in the masonry of building components in contact with the ground can result in various types of damage: efflorescence, flaking of paintwork and render, sanding of render and structural destruction of masonry or also corrosion damage to integrating steel beams.

ACTIVE TREATMENT OF MOISTURE DAMAGE WITH PRODUCTS BY KEIM



RESTORATION

When flooding causes moisture damage, experts should always be consulted on site. They can determine the extent of the damage, adapt the repairs to the specific extent of the damage and take control measurements to assess the success of the renovations.

INTERIOR RENDER DAMAGE

In case of severe interior render damage, the damaged old render should be replaced with KEIM Seccopor moisture-regulating renders, whose special pore structure helps damp masonry to dry. Minor render damage in areas that have already dried out can be repaired with KEIM Universalputz (or KEIM Universalputz Fine) or KEIM Turado. If building components have been affected by contaminated water, the resulting hazard must be clarified and taken into account when renovating.

EXTERIOR RENDER DAMAGE

In case of extensive exterior render damage, the impaired old render should be removed and replaced with products from the KEIM Porosan Trass renovation render system. Minor render damage in areas that have already dried can be repaired with KEIM Universalputz (or KEIM Universalputz Fine). The following applies here too: if building components have been affected by contaminated water, a possible hazard must be clarified and taken into account when renovating.



→ More information on mould remediation is available in our KEIM brochure „Mould Fungi Indoors“.

For download go to www.keim.com

DAMAGED COATINGS

The following applies to simple damage to interior and exterior coatings: the substrate must look and “feel” dry on the surface. Surface contamination should be removed with KEIM Betonschnellreiniger (concrete cleaner). Areas slightly contaminated with oil should be pretreated with a suitable oil remover. Walls affected with water marks should be precoated with KEIM Blockweiß (stain blocker) over the entire surface. KEIM Biosil is an ideal coating for interior spaces with the alkalinity of the binder providing natural protection from mould. KEIM Soldalit is recommended for exterior coatings.

MOULD INFESTATION

When dealing with major damage, a remediation concept is essential, with a focus on protecting the health of those doing the work, even if only partial areas are being treated. It is important for all surfaces with mould infestation to be cleaned or replaced completely. Surfaces with superficial, visible mould infestation should be pretreated with Mycal-XO and then painted with KEIM Mycal-Top. KEIM Mycal-Top optimises the excellent properties of a silicate interior paint for effective mould protection. KEIM Mycal-Top does not require any biocidal active ingredients.



„Correct heating and ventilation is important for preventing mould in the long term, with guideline values for temperature and room humidity giving an indication.“

Karl Weißmann, Master Painter, Deggendorf

RESTORING DAMAGE WITH KEIM: MINERAL SYSTEMS FOR INTERIORS AND EXTERIORS

	Interior	Exterior
<p>Major render damages Damage caused by moisture, efflorescence or salts. White water-soluble salts and calcium carbonate efflorescence are usually visible.</p>	<p>KEIM Seccopor / moisture-regulating renders</p> <ul style="list-style-type: none"> - Unique drying behaviour - No increase in moisture in the masonry - High moisture transport - Ideal in case of high moisture levels - Reduces condensation on the surface <p>KEIM Porosan / renovation renders according to WTA</p> <ul style="list-style-type: none"> - High vapour permeability - High resistance to efflorescing salts - Can be sprayed without air entraining screw jacket 	
<p>Minor render damages Construction-induced cracks or netlike shrinkage cracks.</p>	<p>KEIM Universalputz / adhesive and renovation renders</p> <ul style="list-style-type: none"> - Proven all-rounder, universal in application - Very robust surface, high strength - Extremely good adhesion, ideal for hard substrates <p>KEIM Turado / adhesive and renovation renders</p> <ul style="list-style-type: none"> - Modern low-tension adhesive renovation render - High vapour permeability - High resistance to efflorescing salts - Can be sprayed without air entraining screw jacket 	
<p>Simple coating damage The substrate of the walls is basically free of damage, only the paint is damaged.</p>	<p>KEIM Biosil Interior paint</p> <ul style="list-style-type: none"> - Naturally healthy - Suitable for allergy sufferers - Without preservatives 	<p>KEIM Soldalit Exterior paint</p> <ul style="list-style-type: none"> - Universal, premium, sol-silicate paint - Highly durable and robust - Sustainable facade protection
<p>Superficial, visible mould infestation Areas of usually red, orange to brownish or even black mould growth are visible on interior walls.</p>	<p>KEIM Mycal Mould remediation system</p> <ul style="list-style-type: none"> - For rooms with increased risk of mould infestation - Extremely permeable - Particularly moisture-regulating 	

Left: Successful redevelopment of the Salierstraße housing estate in Mülheim an der Ruhr



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