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Technical Leaflet

Mold prevention and removal on wood and wooden materials



This document serves as an aid for the prevention and avoidance of mold infestation in EGGER OSB and EGGER DHF. It also provides information on how to act in the event of mold.

Mold growth

Spores of various fungi, e.g. mold, mildew, blue stain fungi, etc. can be found everywhere in our ambient air. These spores can cause fungal attack on organic materials in combination with the necessary material

moisture and temperature. However, it is only at a **material humidity above 18%** that conditions are reached in which a fungal infestation of organic materials, such as wood, wood-based materials or dust deposits, is possible at all.

But how can material humidity above 18% occur?

- A prolonged period of humidity above 80-85%
- A prolonged or continuous direct moistening of the material surfaces by condensation water, condensate or precipitation or other climatic influences

What sources lead to this increased humidity?

during the construction phase:

- due to **condensation** on cold surfaces as a result of a missing or incomplete air-tightness layer (usually also the vapor barrier layer) on the room side of the thermal insulation
- increased **moisture penetration** into the building structure, e.g. due to finishing work with wet building materials such as masonry, plastering, screed, painting or wallpapering work.
- due to **precipitation** penetrating the structure as a result of inadequate protective measures during the construction period
- due to extreme **climatic conditions** (possibly also in connection with a faulty construction or execution)
- due to the missing or insufficient ventilation / drying of the structure

during the use phase:

- as a result of the **introduced usage moisture** through breathing air, green plants, laundry, cooking, bathing, showering, etc.



Preventive measures

- in thermally insulated constructions, the vapor barriers (e.g. also the room-side OSB) must be carefully and air-tightly finished **before the start** of the finishing trades with wet building materials. This applies in particular to the penetrations in these airtight layers and the connections to the adjoining building components!
- the sub-roofs made of wood or wood-based materials (OSB or DHF) may only be directly **exposed to the weather** for a maximum of the **limited time** specified by the manufacturer. In principle, after their installation the roof covering should be completed as soon as possible, especially in the autumn and winter months with the increased humidity and precipitation.
- the non-insulated **attic** and cold roofs should be sufficiently and functionally ventilated.
- between the heated building shell and the unheated, non-insulated attic, it must also be ensured that a **functional air-tightness level** exists. In any case, this level must be in place before the finishing work begins, since screed and plaster work result in an enormously high moisture influx that cannot be compensated for by the above-mentioned ventilation options under any circumstances. Frequent weak points in the air-tightness level are, above all, the tightness of any built-in components (floor stairs, ceiling lights) and their integration into this level.
- if moisture enters the building structure, e.g. from damp building materials or other sources, **adequate ventilation** must be provided immediately.

There can never be too much ventilation in construction!

What are the recommendations for ventilation cross-sections?

To ensure sufficient ventilation, the installation of supply air openings in the area of the eaves and exhaust air openings at the ridge (ventilator ridge) is necessary and must be provided in accordance with the standard specifications or the rules and regulations of the specialist trades.

In order to ensure sufficient ventilation, including non-insulated attic, it is recommended to

- maintain a free ventilation cross-section at the eaves of **at least 2 ‰** of the associated roof area, but **at least 200 cm²** for rafter lengths of up to 10 m.
- provide a free ventilation cross-section at the ridge of **at least 0.5 ‰** of the total sloping roof area.

- consider the attic as a "ventilated roof"; accordingly, the sub-roofing (made of sarking membrane or board) must not be led completely up to the ridge, but a ventilation gap of at least **400 cm²/m** must be formed at the ridge (gap width approx. 4-5 cm).

In order to determine the possible presence of defects, it is suitable to check the air tightness using the differential pressure method (**blower door test**) in conjunction with artificial fogging to make the leaks visible.

In general, the specifications of the technical regulations with supply air openings at the eaves and exhaust air openings at the ridge as shown in the following figure (right picture) must be observed.



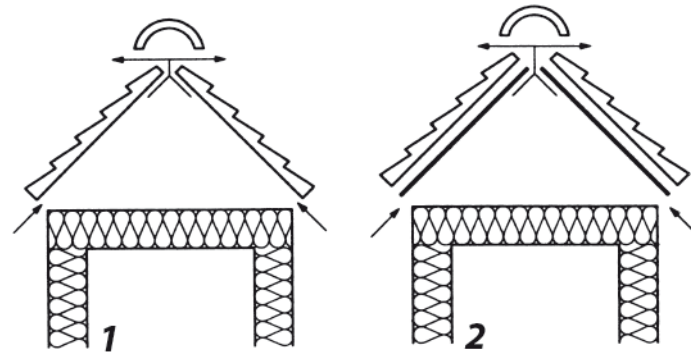


Figure 1: Ventilation system for non-insulated roofs according to roofing regulations

Reconstruction measurement

A mold infestation in the state of construction is a visible indication of e.g. convection currents, condensation water or similar or an unfavorable construction process (an unfinished air seal, an inadmissible moisture entry, insufficient construction drying).

What should be done in case of mold infestation?

The refurbishment should always be two-pronged. The mold should be removed, but above all the cause of the moisture accumulation should be eliminated. If the construction dries out, it is not possible for the fungi to continue growing. The mold is usually only a superficial, optical infestation.

- always the first thing to do is to discover and eliminate the triggering conditions.
- the **moisture content** of the organic materials must be reduced to **below 18%** by drying (if necessary by technical drying) and ventilation.
- the most common and proven refurbishment technique is mold refurbishment with **wiping** (sanding if necessary), **disinfecting** and **bleaching**. For this, checking the framework and climatic conditions in the building structure is an essential accompanying measure.
Note: The refurbishment measures should only be carried out with appropriate experience and with the appropriate protective measures in place.
- in practice, an approx. **25 - 30% hydrogen peroxide solution** has proven to be an effective cleaning and disinfecting agent for

wiping off the surface mold infestation.

Note: The commercially available ready-to-use products often only have active ingredient concentrations of less than 10% and are therefore less suitable for sustainable refurbishment.

- alternatively, it may be possible to treat the surface directly with the special process **"fogging"**.
- if the area is constantly in contact with the indoor air, the exclusion of a hazard is expressly advised beforehand in any case via the determination of the type of fungus by a specialist (e.g. building biologist).
- at the end of the mold refurbishment, all surfaces (walls, ceilings, floors, etc.) in the direct refurbishment area should be cleaned with a powerful **H-class vacuum cleaner** to reduce the spore load.
- at the same time, it is recommended to reduce the concentration of the mold spores, fungal fragments, etc. back to the background concentration usual in the surrounding area by cleaning the room air with **HEPA air purifiers**.

Lime products to improve the hygiene of the living space

In addition, there is a possibility of coating with an **alkaline paint**. Its hygienic effect is due on the one hand to the drying effect of lime, and on the other hand to the germicidal effect of a high pH value and the acid binding

activity. This tends to reduce odor and pollutant problems in the long term.

- the additional measure to the above described



refurbishment steps can be achieved by coating the surfaces of the wooden roof structure e.g. with **swamp lime paint** (cretaceous, MKL,...),

which also helps to avoid a new mold infestation.

Does the OSB or DHF cladding in the roof or wall continue to function after a mold infestation?

From an existing mold infestation, the functionality of the panels is considered not to be limited. After the elimination of the causes, treatment and removal of the mold infestation, the installed panels can continue to be used from a technical point of view, as the structure is not affected.

General Notes

All documents can be found under www.egger.com. For further information please contact our hotline.

For further questions please contact:

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