

control **MOLD & MOISTURE**

They are more dangerous than you think!

Why is the Presence of Mold & Moisture a Problem?

Concern about indoor exposure to mold has been increasing as the public becomes aware that exposure to mold can cause a variety of health effects and symptoms, including allergic reactions. Molds can be found almost anywhere; they grow on virtually any organic substance, as long as moisture and oxygen are present. However, **mold growth can be controlled indoors by controlling humidity.**

Many types of molds exist. All molds have the potential to cause health effects. Molds can produce allergens that can trigger allergic reactions or even asthma attacks in people allergic to mold. Others are known to produce potent toxins and/or irritants. Potential health concerns are an important reason to prevent mold growth and to remediate/clean up any indoor existing mold growth.

When mold growth occurs in buildings, adverse health problems may be reported by some building occupants. People who are affected more quickly by the presence of mold are infants & kids, the elderly, pregnant women, those with allergies or respiratory problems such as asthma, and people with weakened immune systems. Remediators should avoid exposing themselves and others to mold-laden dusts as they conduct their clean-up activities. Caution should be used to prevent mold and mold spores from being dispersed throughout the air where they can be inhaled by building occupants.



Prevention

The key to mold control is moisture control.

Solve moisture problems before they become mold problems!

Investigate and Evaluate Current Problems, - then Plan Remediation

Assess the size of the mold and/or moisture problem and the type of damaged materials before planning the remediation work. Consider the use of an outside professional for affected areas larger than 10 square feet or a patch generally larger than 3 ft by 3 ft. The remediation plan should include steps to fix the water or moisture problem, or the problem may reoccur. The plan should include the use of Personal Protective Equipment (PPE) and include steps to carefully contain and remove moldy building materials to avoid spreading the mold.

Highest priority must be to protect the health and safety of the building occupants and remediators. It is also important to communicate with building occupants when mold problems are identified. The remediation plan may include temporary relocation of some or all of the building occupants.

Do not run the HVAC system if you know or suspect that it is contaminated with mold.

In some cases, indoor mold growth may not be obvious. Mold grows quickly, approximately within 24-48 hours, but will often remain unnoticed for a long period of time. Possible locations of hidden mold include pipe chases and utility tunnels, walls behind furniture, condensation drain pans inside air handling units, porous thermal or acoustic liners inside ductwork, or roof materials above ceiling tiles. You may suspect hidden mold if a building smells moldy, but you cannot see the source, or if you know there has been water damage and building occupants are reporting health problems. **If you believe you have a hidden mold problem, you should consider hiring an experienced professional.**

Mold Prevention Tips

- Fix any leak in the plumbing and building envelope (structure) as soon as possible.
- Watch for condensation and wet spots. Fix source(s) of moisture problem(s) as soon as possible.
- Prevent moisture due to condensation by increasing surface temperature or reducing the moisture level in air (humidity). To increase surface temperature, insulate or increase air circulation. To reduce the moisture level in air, repair leaks, increase ventilation (if outside air is cold and dry), or dehumidify (if outdoor air is warm and humid).
- Keep heating, ventilation, and air conditioning (HVAC) drip pans clean, flowing properly, and unobstructed.
- Vent moisture-generating appliances, such as dryers, to the outside where possible.
- Maintain low indoor humidity, below 60% relative humidity (RH), ideally 30-50%, if possible.
- Perform regular building/HVAC inspections and maintenance as scheduled.
- Clean and dry wet or damp spots within 48 hours.
- Don't let foundations stay wet. Provide drainage and slope the ground away from the foundation.

MOLD & MOISTURE CONTROL

Containment

The purpose of containment during remediation activities is to limit release of mold into the air and surroundings, in order to minimize the exposure of remediators and building occupants to mold. Mold and moldy debris should not be allowed to spread to areas in the building beyond the contaminated site.

The two types of containment are limited and full. Choice of containment should be based on professional judgment. Containment may include segregation of the area by polyethylene sheeting, use of negative air pressure in the area, a decontamination or airlock area for entry/exit, sealed bags for disposal of contaminated PPE, and so on. Containment for medium to large scale remediation projects should be designated and implemented by a qualified professional.

Remediate Moisture and Mold Problems

1. Fix the water or humidity problem. Complete and carry out the repair plan if appropriate. Revise and/or carry out maintenance plan if necessary. Revise remediation plan as necessary, if more damage is discovered during remediation.
2. Continue to communicate with building occupants, as appropriate to the situation. Be sure to address all concerns.
3. Completely clean up mold and dry water-damaged areas. Select appropriate cleaning and drying methods for damaged/contaminated materials. Carefully contain and remove moldy building materials. Use appropriate Personal Protective Equipment (PPE). Arrange for outside professional support if necessary.



CHECKLIST FOR MOLD REMEDIATION

INVESTIGATE & EVALUATE MOISTURE & MOLD PROBLEMS

- ☐ Assess size of moldy area (square feet)
- ☐ Consider the possibility of hidden mold
- ☐ Clean up small mold problems and fix moisture problems before they become large problems
- ☐ Select remediation manager for medium or large size mold problems
- ☐ Investigate areas associated with occupant complaints
- ☐ Identify source(s) or cause of water or moisture problem(s)
- ☐ Note type of water-damaged materials (wallboard, carpet, etc.)
- ☐ Check inside air ducts and air handling unit
- ☐ Throughout process, consult with qualified professional for medium to large projects

COMMUNICATE WITH BUILDING OCCUPANTS AT ALL STAGES OF THE PROCESS, AS APPROPRIATE

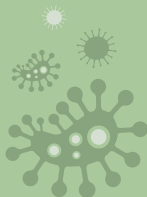
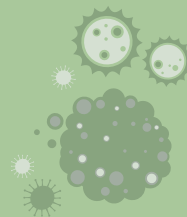
- ☐ Designate contact person for questions & comments about medium or large scale remediation as needed

PLAN REMEDIATION

- ☐ Adapt or modify remediation guidelines to fit your situation; use with professional judgment
- ☐ Plan to dry wet, non-moldy materials within 48 hours to prevent mold growth
- ☐ Select cleanup methods for moldy items
- ☐ Select Personal Protective Equipment (protect remediators)
- ☐ Select containment equipment (protect building occupants)
- ☐ Select remediation personnel who have the experience and training needed to implement the remediation plan and use PPE and containment as appropriate

REMEDiate MOISTURE & MOLD PROBLEMS

- ☐ Fix moisture problems, implement repair plan and/or maintenance plan
- ☐ Dry wet, non-moldy materials within 48 hours to prevent mold growth
- ☐ Clean and dry moldy materials
- ☐ Discard moldy porous items that can't be cleaned



Additional Information & Resources

The information in this paper is excerpted from the federal EPA publication EPA 402-K-01-001, "Mold Remediation in Schools and Commercial Buildings", March 2001. The EPA publication contains additional information and detail and is available in a pdf file format at: www.epa.gov/mold/mold-remediation-schools-and-commercial-buildings-guide, www.cdc.gov/mold, & www.fema.gov

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