

MOLD AND MOISTURE CONTROL POLICY

General Information

Concern about mold in the residential setting is escalating. While there are many unanswered questions about potential health effects of mold, it is prudent to (1) repair any known conditions involving excessive moisture that could, under the right conditions, lead to mold growth and (2) clean and remove any mold growth when it occurs. In order to accomplish this objective, it is important to establish a partnership between the property's management staff and residents so conditions that require attention are identified and dealt with promptly.

Mold Information and Prevention Lease Addendum (part of RA-2) informs residents of their obligation to prevent mold through proper routine housekeeping and to report the presence of moisture/mold in their apartment home to the management staff.

In addition, Management finds it useful to provide residents with educational information about mold and how to prevent mold growth in apartments, *Resident "Tip Sheet" to Avoid Moisture Build Up* (part of RA-2). This information is to be provided to residents as part of their move-in package.

Training

Please let your Regional Property Supervisor know of any training opportunities or alternatives your staff should attend. There are no specific training requirements currently mandated by state or federal law for workers who may remediate mold as part of their responsibilities.

Although there are no established Permissible Exposure Levels (PELs) or Threshold Limit Values (TLVs) for mold, as part of the required training under OSHA's Hazard Communication Standard (29CFR 1910.1200), workers must be informed about safe work practices for using various chemicals, including disinfectants, and personal protective equipment, which may be a part of a mold response. Workers who may be involved in cleanup of extensive mold should be supplied with appropriate respirators, which may involve compliance with OSHA's Respiratory Protection Standard (29CFR 1910.134).

On-site staff should be familiar with procedures to deal with water intrusion/excessive moisture and appropriate remediation techniques for water-damaged surfaces. Employees should also review any company-specific policies and procedures and be familiar with the appropriate corporate/management contact person, should decisions need to be made concerning testing or activities beyond their scope of training or responsibility.

Routine Maintenance

Routine maintenance and turnover activities provide on-site staff with the opportunity to monitor and correct any conditions involving moisture that could lead to the growth of mold. Treatment of mold should be incorporated into general property management activities. Staff should perform an inspection for mold as part of the unit turnover process. Any visual mold growth should be immediately and properly remediated as part of the requirements of the turnover process. The *Mold and Moisture Control Monitoring Checklist* (Form MO-32) is to be utilized during the turnover process. All deficiencies must be noted on the *Mold and Moisture Control Tracking Log* (Form MO-31) and corrected as soon as possible. When significant remediation is required, please notify the Regional Property Supervisor immediately.

On-site staff is encouraged to monitor the property for signs of moisture, water damage or situations that may lead to conditions favorable for mold growth (e.g., leaking faucets, broken sprinkler heads) when conducting other maintenance activities. Also be aware of situations such as carpet-cleaning techniques, which may leave carpets too damp and run the risk of creating conditions favorable for mold growth.

Inspection

A visual inspection is the first step in identifying the extent of moisture damage, which may create conditions favorable for mold growth. To the maximum extent possible ceiling tiles, gypsum wallboard, cardboard, duct liner, wood, carpet, paper, and other cellulose surfaces should be given careful attention during a visual inspection. Kitchens, bathrooms, windows and HVAC systems should also be scrutinized.

An earthy or musty odor, may also indicate that mold is present. The use of a moisture meter, to measure the saturation in building materials, is useful in evaluating the extent of water damage and determining when the appropriate moisture level has been restored. Under further investigation, it may be necessary to look inside of wall cavities or filter areas to determine the extent of any water damage or mold growth.

Once mold growth is observed, the extent of any damaged area should be evaluated in order to determine appropriate remedial strategies based on EPA guidance. Don't forget to notify the Regional Property Supervisor and complete the *Mold and Moisture Control Monitoring Checklist* (Form MO-32).

The following is a list of materials and equipment that are needed to deal with water intrusion/mold remediation and can be found at most supply stores.

1. Moisture meter
2. High efficiency particulate air (HEPA) filtered vacuum cleaner
3. Disinfectant or bleach and standard cleaning detergent
4. Wet vacuum

5. Blowers (have on site or know where to rent)
6. Dehumidifiers (have on site or know where to rent)
7. Localized containment bag (2-glove bags)
8. Disposable clothing (1 box)
9. N-95 Disposable respirators (5 pack)
10. 6-mil disposable bags (1 box)
11. 6-mil Polyethylene sheeting (2 rolls)
12. Yellow caution tape (3 rolls)
13. Plastic spray cleaning bottles
14. Disposable scrub brush, sponges and cloths

EPA's Tips for Maintenance Personnel¹

- Fix leaky plumbing and leaks in the building envelope as soon as possible.
- Watch for condensation and wet spots. Fix source(s) of moisture intrusion 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.

Proper HVAC Maintenance

Improperly cycling HVAC systems, or improper use by the residents, can result in conditions of excessive humidity, which could lead to mold growth. Develop maintenance guidelines based on manufacturer's specifications for HVAC ventilation equipment (including appropriate settings, filter changes and cleaning).

¹ Source: EPA, "Mold Remediation in Schools and Commercial Buildings" at p. 3 (March 2001, Updated June 2001).

Guidelines for Processing a Maintenance Service Request

At the Office

The less said to a resident the better. Treat mildew (mold) as a routine event. Never admit any responsibility or wrongdoing. Be professional. If asked what the discoloration is state 'staining caused by condensation'. NEVER use the word mold when talking to a resident.

1. Fill out a service request form and in doing so, record the observations of the resident regarding the presence of conditions that may be favorable to mold growth, or whether the resident believes mold growth is present. If a health concern is expressed or property damage is reported, immediately contact the Regional Property Supervisor and submit a *Mold and Moisture Control Monitoring Checklist* (Form MO-32).

NOTE: If the resident has had the mold tested, send a copy of the test results to the Regional Property Supervisor.

2. Treat the service request as a priority.
3. Complete the *Mold and Moisture Control Tracking Log* (Form MO-31). Maintain the Log in the management office.

At the Service Location

1. Determine the nature and extent of conditions favorable for mold growth, or mold, if any. Determine the source of any water infiltration or excessive moisture – interior and exterior.
2. If a source of water or excessive moisture is found: stop the leak or cause of excessive moisture and dry all affected areas completely and immediately, or within 24 hours of notification. Consult the procedures for drying out surfaces found on page 7, Table 1.
3. If no mold is found: Send *Resident Follow-up Letter* (Form MO-33) indicating results of investigation.
4. If mold is found: Clean up the mold following the procedures outline on page 8, Table 2.
5. Use a Work Order Request (or *Resident Follow-up Letter*, Form MO-33) to inform the resident of the corrective action completed and additional steps to be taken, if any.

Back at the Office

1. Before determining that the remediation will require the use of outside professionals or that a unit be vacated, consult the Regional Property Supervisor for guidance.
2. Complete the *Mold and Moisture Control Tracking Log* (Form MO-31) to reflect what action was taken.

Within 7-10 Days

1. Send a *Resident Follow-up Letter* (Form MO-33).
2. Log the follow-up action on the *Mold and Moisture Control Tracking Log* (Form MO-31).

**** COMPLETE EVERY STEP OF THESE GUIDELINES WHEN POSSIBLE****

Procedures for Mold Remediation

Once mold is identified, it is essential to identify and correct the underlying source of water intrusion. Otherwise, mold growth will recur. Generally speaking, if mold is either seen or smelled, it should be remediated. Thus, a visual inspection is the first step to assessing a mold service request. According to the previously mentioned EPA guidelines, it is not essential to identify the types of mold (i.e., test) to remediate the situation. Under certain circumstances, however, it may be important to have building materials/air tested to determine the type of mold present. Consult with Regional Property Supervisor before proceeding with any testing.

If extensive (i.e., the total surface area of visible mold is greater than 100 square feet or the potential for increased resident or remediator exposure during remediation is estimated to be significant), it is important to consult an experienced professional with specific experience in mold projects to develop a remediation plan.

Sampling and Testing

Sampling and testing are to proceed only upon the approval of the Regional Property Supervisor. A reputable Indoor Environmental Quality professional (preferably a Certified Industrial Hygienist) should conduct the sampling. The American Industrial Hygiene Association (AIHA) (www.aiha.org) and the American Society of Cleaning Restorers (ASCR) (www.ascr.org) may provide leads. There are advantages to

identifying a professional contact before you have a problem. A lab, accredited by AIHA's Environmental Microbiological Laboratory Accreditation Program (EMLAP), should perform all testing analysis.

Testing may involve bulk and/or air sampling.

(1) Bulk Sampling

- Bulk or surface sampling involves taking a sample of material and performing laboratory analysis. Sampling and testing are not a prerequisite to remediation.

(2) Air Sampling

- Air sampling may be utilized if the presence of mold is suspected (e.g., musty odors) but cannot be identified through a visual inspection.
- Any air sampling must also include an exterior air sample as a baseline sample for the ambient environmental level of mold.
- If air sampling is conducted, personnel conducting the sampling must be trained in proper air sampling methods.

Remediation

In all situations, the underlying cause of water accumulation must be fixed or the problem may occur. A prompt response (within 24 to 48 hours) and thorough clean up, drying and/or removal of water-damaged materials will prevent or limit mold growth.

EPA has delineated three levels of remediation, based on the total area of material affected by visible mold growth, see page 7, Table 1. EPA's guidelines and suggested work practices include the use of Personal Protective Equipment ("PPE") and containment systems based on the total surface area affected. Adapt or modify these guidelines to fit your situation and contact the Regional Property Supervisor with any questions regarding retaining outside consultants.

In some circumstances, the property owner/manager may retain an environmental restoration consultant to deal with a water intrusion/mold problem. In other cases, it may be useful to obtain a written protocol prepared by an industrial hygienist or other qualified indoor air quality professional to be used as a guide for on-sit staff to follow in conducting the remediation. Under certain circumstances, written confirmation from the contractor, which states that remediation has been performed and the property is habitable, should be obtained.

Table 1: Water Damage – Cleanup and Mold Prevention	
Guidelines for Response to Clean Water Damage Within 24-48 Hours to Prevent Mold Growth	
Water-Damaged Material	Actions
Books and papers	<ul style="list-style-type: none"> • For non-valuable items, discard books and papers. • Photocopy valuable/important items, discard originals. • Freeze (in frost-free freezer or meat locker) or freeze-dry.
Carpet and backing – dry within 24-48 hours	<ul style="list-style-type: none"> • Remove water with water extraction vacuum. • Reduce ambient humidity levels with dehumidifier. • Accelerate drying process with fans.
Ceiling tiles	<ul style="list-style-type: none"> • Discard and replace.
Cellulose insulation	<ul style="list-style-type: none"> • Discard and replace.
Concrete or cinder block surfaces	<ul style="list-style-type: none"> • Remove water with water extraction vacuum. • Accelerate drying process with dehumidifiers, fans, and/or heaters.
Fiberglass insulation	<ul style="list-style-type: none"> • Discard and replace.
Hard surface, porous flooring* (Linoleum, ceramic tile, vinyl)	<ul style="list-style-type: none"> • Vacuum or damp-wipe with water and mild detergent and allow to dry; scrub if necessary. • Check to make sure underflooring is dry; dry underflooring if necessary.
Non-porous, hard surfaces (Plastics, metals)	<ul style="list-style-type: none"> • Vacuum or damp-wipe with water and mild detergent and allow to dry; scrub if necessary.
Upholstered furniture	<ul style="list-style-type: none"> • Remove water with water extraction vacuum. • Accelerate drying process with dehumidifiers, fan, and/or heaters. • May be difficult to completely dry within 48 hours. If the piece is valuable, you may wish to consult a restoration/ water damage professional who specializes in furniture.
Wallboard (Drywall and gypsum board)	<ul style="list-style-type: none"> • May be dried in place if there is no obvious swelling and the seams are intact. If not, remove, discard, and replace. • Ventilate the wall cavity, if possible.
Window drapes	<ul style="list-style-type: none"> • Follow laundering or cleaning instructions recommended by the manufacturer.
Wood surfaces	<ul style="list-style-type: none"> • Remove moisture immediately and use dehumidifiers, gentle heat, and fans for drying. (Use caution when applying heat to hardwood floors). • Treated or finished wood surfaces may be cleaned with mild detergent and clean water and allowed to dry. • Wet paneling should be pried away from wall for drying.

Source: U.S. EPA, "Mold Remediation in Schools and Commercial Buildings" (March 2001, Updated June 2001).

*The Subfloor under the carpet or other flooring material must also be cleaned and dried. See the appropriate section of this table for recommended actions depending on the composition of the subfloor.

Table 2: U.S. EPA Guidelines for Remediating Building Materials with Mold Growth Caused by Clean Water*			
Material or Furnishing Affected	Cleanup Methods†	Personal Protective Equipment	Containment
SMALL – Total Surface Area Affected Less Than 10 Square Feet (ft²)			
Books and papers	3	Minimum N-95 respirator, gloves, and goggles	None required
Carpet and backing	1, 3		
Concrete or cinder block	1, 3		
Hard surface, porous flooring (linoleum, ceramic tile, vinyl)	1, 2, 3		
Non-porous, hard surfaces (plastics, metals)	1, 2, 3		
Upholstered furniture & drapes	1, 3		
Wallboard (drywall & gypsum board)	3		
Wood surfaces	1, 2, 3		
MEDIUM – Total Surface Area Affected Between 10 and 100 (ft²)			
Books and papers	3	Limited or Full Use professional judgment, consider potential for remediator exposure and size of contaminated area	Limited Use professional judgment, consider potential for remediator/occupant exposure and size of contaminated area
Carpet and backing	1, 3, 4		
Concrete or cinder block	1, 3		
Hard surface, porous flooring (linoleum, ceramic tile, vinyl)	1, 2, 3		
Non-porous, hard surfaces (plastics, metals)	1, 2, 3		
Upholstered furniture & drapes	1, 3, 4		
Wallboard (drywall & gypsum board)	3, 4		
Wood surfaces	1, 2, 3		
LARGE – Total Surface Area Affected Greater Than 100 (ft²) or Potential for Increased Occupant or Remediator Exposure During Remediation Estimated to be Significant			
Books and papers	3	Full Use professional judgment, consider potential for remediator/occupant exposure and size of contaminated area	Full Use professional judgment, consider potential for remediator exposure and size of contaminated area
Carpet and backing	1, 3, 4		
Concrete or cinder block	1, 3		
Hard surface, porous flooring (linoleum, ceramic tile, vinyl)	1, 2, 3, 4		
Non-porous, hard surfaces (plastics, metals)	1, 2, 3		
Upholstered furniture & drapes	1, 2, 4		
Wallboard (drywall & gypsum board)	3, 4		
Wood surfaces	1, 2, 3, 4		

Table 2 continued

*Use professional judgment to determine prudent levels of Personal Protective Equipment (PPE) and containment for each situation, particularly as the remediation site size increases and the potential for exposure and health effects rises. Assess the need for increased Personal Protective Equipment, if, during the remediation, more extensive contamination is encountered than was expected. Consult Table 1 if materials have been wet for less than 48 hours, and mold growth is not apparent. These guidelines are for damage caused by clean water. If you know or suspect that the water source is contaminated with sewage, or chemical or biological pollutants, then the Occupational Safety and Health Administration (OSHA) requires PPE and containment. An experienced professional should be consulted if you and/or your remediators do not have expertise in remediating contaminated water situations.

†Select method most appropriate to situation. Since molds gradually destroy the things they grow on, if mold growth is not addressed promptly, some items may be damaged such that cleaning will not restore their original appearance. If mold growth is heavy and items are valuable or important, you may wish to consult a restoration/water damage/remediation expert. **Please note that these are guidelines; other cleaning methods may be preferred by some professionals.**

Cleanup Methods

- Method 1: Wet vacuum (in the case of porous materials, some mold spores/fragments will remain in the material but will not grow if the material is completely dried). Steam cleaning may be an alternative for carpets and some upholstered furniture.
- Method 2: Damp-wipe surfaces with plain water or with water and detergent solution (except wood – use wood floor cleaner); scrub as needed.
- Method 3: High-efficiency particulate air (HEPA) vacuum after the material has been thoroughly dried. Dispose of the contents of the HEPA vacuum in well-sealed plastic bags.
- Method 4: Discard or remove water-damaged materials and seal in plastic bags while inside of containment, if present. Dispose of as normal waste. HEPA vacuum area after it is dried.

Personal Protective Equipment (PPE)

- Minimum: Gloves, N-95 respirator, goggles/eye protection
- Limited: Gloves, N-95 respirator or half-face respirator with HEPA filter, disposable overalls, goggles/eye protection
- Full: Gloves, disposable full body clothing, head gear, foot coverings, full-face respirator with HEPA filter

Containment

- Limited: Use polyethylene sheeting ceiling to floor around affected area with a slit entry and covering flap; maintain area under negative pressure with HEPA filtered fan unit. Block supply and return air vents within containment area.
- Full: Use two layers of fire-retardant polyethylene sheeting with one airlock chamber. Maintain area under negative pressure with HEPA filtered fan exhausted outside of building. Block supply and return air vents within containment area.