



MULTIFAMILY

Moisture Management Plan Handbook

Tools are provided to help owners and managers comply with Freddie Mac requirements for mold and moisture management and mitigation.

Use of these tools and compliance with Freddie Mac's mold and moisture requirements will not guarantee that mold and moisture will not occur, or that property owners will not suffer mold-related damage and/or liability. Owners and managers should consult their engineers or environmental advisors and make their own determination as to whether a moisture management plan that conforms to Freddie Mac's requirements will be effective in practice to minimize mold risks and protect tenants. Freddie Mac represents only that a plan prepared in accordance with these instructions will in most cases satisfy Freddie Mac's requirements for such plans, and does not represent that such a plan in practice will be effective to manage mold risks or prevent mold damage.

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PURPOSE OF THE MMP

To mitigate risks associated with mold and moisture, Freddie Mac is requiring Moisture Management Plans (MMPs) for all properties. Freddie Mac expects each MMP to take a two-pronged approach: control moisture before mold begins growing, and if mold is discovered, minimize its impacts and prevent further contamination by isolating and remedying the source of the problem and any affected materials. Freddie Mac's policy requires that MMPs incorporate mold response and remediation guidance provided by the Environmental Protection Agency (EPA)¹, but MMPs also must reflect the individual site's characteristics.

CORE ELEMENTS OF THE MMP

Many owners and managers have effective plans in place to control mold risks. As long as these plans contain the core elements identified below, it is anticipated that they will be acceptable to Freddie Mac. For owners and managers without plans or with a need for supplemental information, Freddie Mac is providing tools in this Handbook that can be used to prepare an MMP that will satisfy Freddie Mac's requirements (except in unusual cases).

All plans must be in writing and located on the subject property. The written document must describe in detail how the following core elements are to be implemented:

- **Staff training**
- **Tenant information**
- **Inspections**
- **Incident response and remediation**
- **Documentation**

All plans must:

- Describe the routines that will be followed to manage moisture and prevent mold
- Explain the steps that will be taken if either is discovered
- Specify who is responsible for all actions
- Incorporate adequate documentation to record all plan activity
- Be kept on site for annual plan verification

¹ Environmental Protection Agency. *Mold Remediation in Schools and Commercial Buildings*.

MMP CORE ELEMENTS AND RELATED TOOLS

Staff Training

Evidence needs to be provided to indicate that on site maintenance and management staffs have been made aware of the hazards associated with moisture and mold, how to inspect for visual and olfactory clues, and what steps need to be taken if moisture or mold is encountered. How staff is trained, what materials and information are used, when staff is trained and who conducts the training must all be specified in the plan. Some tools that respond to this requirement are listed below; however, this is not an all-inclusive list of resources or materials:

- *Sources for Industry Information* (page 7-8):
general reference sources for more detailed information on mold
- *Resources for Training* (page 9):
information on the hazards associated with mold and guidance for dealing with water intrusion and mold
- *Annual Employee Training Checklist* (page 10):
documentation of employee training
- *EPA Tables 1 and 2* (pages 20-22):
guidance for addressing water cleanup and mold remediation
- *Resident Tip Sheet* (pages 11-12):
information on mold hazards and actions to mitigate its potential impacts

Tenant Information

Tenants need to be notified regarding the risks associated with moisture and mold, the actions they can take to mitigate these risks, and any corrective measures taken by management regarding moisture or mold. Documentation must include the residents' acknowledgement of their responsibilities. Further, when mold is observed, residents must be informed regarding the observations and planned remedial actions. How residents are informed, when they are provided information, who is responsible for providing this information, and how this information is recorded must be included in the plan. Some tools that respond to this requirement are listed below; however, this is not an all-inclusive list of resources or materials:

- *Resident Tip Sheet* (pages 11-12): as described above
- *Lease Provision or Addendum Tips* (page 13):
acknowledgement of tenant responsibilities
- *Initial Resident Letter* (page 14):
documentation of communication with resident regarding water and/or mold event
- *Follow-up Resident Letter* (page 15):
documentation of communication with resident regarding resolution of water and/or mold event
- *Resident Information Checklist* (page 16):
documents communications with residents

Inspections

Regularly scheduled and comprehensive inspections must be conducted by staff that has received appropriate training and all inspections must be documented. Areas impacted by water intrusion must be scheduled for re-inspection to determine if mold has developed. Areas where mold remediation has been conducted must be scheduled for re-inspection to verify that mold has not re-developed. The plan must detail the inspection plan, including when inspections are to be conducted, who is responsible for scheduling and conducting inspections, the scope of all inspections, and how inspections are recorded. Some tools that respond to this requirement are listed below; however, this is not an all-inclusive list of resources or materials:

- *Inspection Schedule* (page 17): documents planned inspections
- *INTERIOR Inspection Checklist* (page 18): documents actual inspections
- *EXTERIOR / HVAC Inspection Checklist* (page 19): documents actual inspections

Incident Response and Remediation

All water intrusion and mold events must be responded to in a timely manner per EPA guidance as described in the publication, *Mold Remediation in Schools and Commercial Buildings*. Verifiable records are to be maintained regarding all significant water intrusion events, any evidence of mold, and corrective actions taken regarding moisture and mold. The records need to indicate the date of the observation, date of the response, and type of response. The plan must also specify that only trained individuals will respond to water and mold events. Further, the plan must include a provision for notifying tenants of all mold remediation actions. Some tools that respond to this requirement are listed below; however, this is not an all-inclusive list of resources or materials:

- *EPA Tables 1 and 2* (pages 20-22): as described above
- *Incident Tracking Log* (page 23): documents all issues identified and actions taken in summary format
- *Event Checklist* (page 24): detailed documentation for specific issues and resolutions
- *Initial Resident Letter* (page 14): as described above
- *Follow-up Resident Letter* (page 15): as described above
- *Resident Information Checklist* (page 16): as described above

Documentation

The plan must be written and maintained on site. All actions planned and taken must be recorded and maintained for verification. The plan must detail who is responsible for its maintenance and application. Some tools that respond to this requirement are listed below; however, this is not an all-inclusive list of resources or materials:

- *Core Elements and Relevant Tools Summary* (page 6): summary of tools and their applications
- *Annual Employee Training Checklist* (page 10): as described above
- *Resident Information Checklist* (page 16): as described above
- *Inspection Schedule* (page 17): as described above
- *Inspection Checklists* (pages 18 – 19): as described above
- *Incident Tracking Log* (page 24): as described above
- *Event Checklist* (page 25): as described above
- *Materials and Equipment List* (page 26): list of materials and equipment to be readily available on site
- *Contact List* (page 27): list of contacts and vendors to provide services not readily available on site

TOOL Core Elements and Relevant Tools Summary

Core Element	Description	Relevant Tool(s)
<i>Annual Plan Requirements</i>		
Tenant Information	Provide information to all tenants at the time of lease signing or renewal, or once a year, whichever is most frequent. The information should provide residents with facts about mold and tips to minimize moisture and mold growth.	<ul style="list-style-type: none"> • Resident Tip Sheet • Resident Information Checklist
Tenant Information	Include language regarding tenant acknowledgement of mold hazards and his/her obligations to mitigate such hazards in every tenant lease.	<ul style="list-style-type: none"> • Lease Provision or Lease Addendum Tips
Inspections	Inspections for water intrusion and mold must be routine, comprehensive, verifiable, and include: all inhabited spaces (especially any areas with past mold and/or moisture issues), HVAC systems (and associated spaces), and exterior building skin materials (to include roofing, siding, windows and doors).	<ul style="list-style-type: none"> • Inspection Schedule • All Inspection Checklists
<i>Ongoing Plan Requirements</i>		
Documentation	The plan must be written and verifiable at the subject property. Record every inspection, each observed or reported incident relating to water intrusion and/or mold, and all responses. Keep all records on site.	<ul style="list-style-type: none"> • The Written Plan • All Tools
Training	Provide information regarding the risks associated with mold and the procedures to properly respond to inspection, repair, remediation, and documentation requirements to maintenance workers and on site management.	<ul style="list-style-type: none"> • Annual Employee Training Checklist • Resources for Training • Sources for Industry Information • EPA Tables 1 and 2 • Resident Tip Sheet
<i>Incident Response/Remediation Requirements</i>		
Incident Response	Respond to all water intrusion events in a timely manner per EPA recommendations. Record all findings and actions	<ul style="list-style-type: none"> • EPA Table 1 • Materials and Equipment List • Contact List
Tenant Information	Provide tenants written notification of findings and actions taken	<ul style="list-style-type: none"> • Initial Resident Letter • Follow-up Letter
Inspection	Re-inspect areas affected by water intrusion to determine if mold develops. Re-inspect areas where mold remediation has been conducted to determine if mold re-emerges. If water intrusion and/or mold is caused by a rain event, re-inspect completed work after the next rain.	<ul style="list-style-type: none"> • All Inspection Checklists
Remediation	Correct all mold issues per EPA guidance.	<ul style="list-style-type: none"> • EPA Table 2 • Materials and Equipment List • Contact List
Documentation	Record all findings and actions.	<ul style="list-style-type: none"> • Incident Tracking Log • Event Checklist

TOOL Sources for Industry Information

U.S. Environmental Protection Agency—Indoor Air Quality

- General information: <http://www.epa.gov/iaq/> or the Indoor Air Quality Information Clearinghouse, at 800.438.4318
- Mold-specific information: <http://www.epa.gov/iaq/molds/index.html>
- EPA's guidance, *Mold Remediation in Schools and Commercial Buildings*, can be found at <http://www.epa.gov/iaq/molds/images/moldremediation.pdf>.
- The document *Building Air Quality: A Guide for Building Owners and Facility Managers*, at <http://www.epa.gov/iaq/largebldgs/baqtoc.html>, has an appendix (Appendix C) which specifically deals with moisture and mold concerns.
- The mold resources page, <http://www.epa.gov/iaq/molds/moldresources.html>, contains many useful links and is a good starting point for anyone wanting to learn more about mold.

U.S. Department of Labor, Occupational Safety and Health Administration

- Mold-specific information: <http://www.osha.gov/SLTC/molds/>
- Provides information about applicable standards (OSHA and ANSI) as well as general mold information and testing methods.
- Also provides a link to *Fungal Contamination in Public Buildings: A Guide to Recognition and Management*, from the Federal-Provincial Committee on Environmental and Occupational Health, Environmental Health Directorate, Health Canada: http://www.hc-sc.gc.ca/hecs-sesc/air_quality/pdf/fungal.pdf. While some of the information is specific to Canada's regulations, this document provides a thorough review of mold information and treatment.

New York City Department of Health & Mental Hygiene

- New York City has issued a comprehensive review and guidance on mold issues, the *Guidelines on Assessment and Remediation of Fungi in Indoor Environments*, which can be found at <http://www.ci.nyc.ny.us/html/doh/html/epi/moldrpt1.html> or by calling 212.788.4290.

American Industrial Hygiene Association

- General information: www.aiha.org or 703.849.8888
- *The Facts About Mold: A Glossary* available at <http://www.aiha.org/governmentaffairs-pr/html/mold-glossary.htm>.
- Mold information and links available at <http://www.aiha.org/SplashPages/html/topic-mold.htm>.

American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Inc.

- General information: <http://www.ashrae.org/> or 800.527.4723
- ASHRAE has compiled a book, *Mold and Moisture Management in Buildings*, available for purchase online at <http://resourcecenter.ashrae.org/store/ashrae/newstore.cgi?itemid=21029&view=item&categoryid=174&categoryparent=174&page=1&loginid=89000>.

Sources for Industry Information (concluded)

National Multi Housing Council

- General information: <http://www.nmhc.org> or 202.974.2300
- Mold and mildew page: <http://www.nmhc.org/Content/BrowseIssues.cfm?IssueID=78>
- NMHC offers a guidance, *Operations and Maintenance Plan for Mold and Moisture Control in Apartment Properties*, available for members only.
- Some of the website's links are for members only.

National Apartment Association

- General information: <http://www.naahq.org/> or 703.518.6141
- Provides a link to purchase the Mold Operations and Maintenance Training Program for Multifamily Housing Professionals video: <http://www.naahq.org/Education/moldflyer.PDF>.
- Most links are for members only.

National Association of Home Builders

- General information: <http://www.nahb.org/> or 800.368.5242
- Mold page: <http://www.nahb.org/page.aspx/category/sectionID=205>

Also offers the Household Mold Resource Center, at <http://www.moldtips.com/> (primarily geared toward single-family homeowners).

TOOL Resources for Training

Management is responsible for ensuring that on-site maintenance and management staff have the knowledge and tools necessary to deal with mold and moisture problems. Although some training sources are identified below, these are not represented to be comprehensive or fully adequate; management must determine what level of information is necessary to provide workers with sufficient knowledge. All training must be documented.

Background Reading

For the majority of staff training, the most cost-effective training method is having staff read applicable guidance documents, such as the following:

- EPA's guidance, *Mold Remediation in Schools and Commercial Buildings*, which can be found at <http://www.epa.gov/iaq/molds/images/moldremediation.pdf> or by calling the Indoor Air Quality Information Clearinghouse at 800.438.4318.
- The New York City Department of Health & Mental Hygiene's *Guidelines on Assessment and Remediation of Fungi in Indoor Environments*, which can be found at <http://www.ci.nyc.ny.us/html/doh/html/epi/moldrpt1.html> or by calling 212.788.4290.

See also the "Sources for Industry Information" tool for further reading resources.

Training Videos

For a moderate initial cost, staff can also view training videos such as the *Mold Operations and Maintenance Training Program for Multifamily Housing Professionals*, from the National Apartment Association and the National Multi Housing Council. This 35-minute video can be ordered online at <http://www.naahq.org/Education/moldflyer.PDF> or by phone at 703.518.6141.

Intensive Training Courses

If formal training courses are desired, there are many potential options available online. For example, the Indoor Air Quality Association offers a 2-day mold remediation worker course (information available at http://www.iaqa.org/mold_remediation_worker_course.htm), and a Certified Mold Remediator course http://www.iaqa.org/cmr_info.htm though these are more expensive options and probably go beyond the level of training needed for maintenance staff. Training courses vary greatly in cost, location, and length.

TOOL Resident Tip Sheet: Mold Facts and Tips

Residents must be informed about the risks associated with mold and actions they can take to mitigate these risks.

Facts about Mold

- *What are molds?* Molds are simple, microscopic organisms, present virtually everywhere, indoors and outdoors. Molds, along with mushrooms and yeasts, are *fungi* and are needed to break down dead material and recycle nutrients in the environment. For molds to grow and reproduce, they need only a food source – any organic material, such as leaves, wood, paper, or dirt— and moisture. Because molds grow by digesting the organic material, they gradually destroy whatever they grow on. Sometimes, new molds grow on old mold colonies. Mold growth on surfaces can often be seen in the form of discoloration, frequently green, gray, brown, or black but also white and other colors. Molds release countless tiny, lightweight spores, which travel through the air.
- *Can mold become a problem in my home?* Molds will grow and multiply whenever conditions are right— sufficient moisture is available and organic material is present. The presence of organic material cannot be prevented, because such materials are the materials with which your home is made. However, the moisture that mold needs to grow, and the accumulation of that moisture can be controlled. Be on the lookout in your home for common sources of indoor moisture that may lead to mold problems (see the following section for prevention tips).
- *Should I be concerned about mold in my home?* Yes. If indoor mold contamination is extensive, it can release chemicals and cause very high and persistent airborne spore exposures. Persons exposed to high levels of chemicals or spore levels can become sensitized and develop allergies to the mold or other health problems. Mold growth can damage your furnishings, such as carpets, sofas, and cabinets. Clothes and shoes in damp closets can become soiled. In time, unchecked mold growth can cause serious damage to the structural elements in your home. Mold can also produce health effects through inflammation, allergy, or infection. Allergic reactions are common following mold exposure. Typical symptoms that mold-exposed persons report (alone or in combination) include:
 - Respiratory problems, such as wheezing, difficulty breathing, and shortness of breath
 - Nasal and sinus congestion
 - Eye irritation (burning, watery, or reddened eyes)
 - Dry, hacking cough
 - Nose or throat irritation
 - Skin rashes or irritationHeadaches, memory problems, mood swings, nosebleeds, body aches and pains, and fevers are occasionally reported in mold cases, but their cause is not understood.

Tips for Residents

It is our goal to maintain the highest quality living environment for our residents. To help achieve this goal, it is important to work together to minimize the potential for conditions that could lead to the growth of naturally occurring mold. Residents can help minimize mold growth in their apartment homes by taking the following actions:

Ventilation

- Adequate ventilation is essential – open windows during dry weather. If it is not possible to open windows, run the fan on the apartment air-handling unit to circulate fresh air throughout your apartment.
- In damp or rainy weather conditions, keep windows and doors closed.
- If possible, maintain a temperature of between 50° and 80° Fahrenheit within your apartment at all times, and a comfortably low humidity (less than 60% relative humidity).

Resident Tip Sheet (concluded)

- Use the pre-installed bathroom fan or alternative ventilation when bathing or showering and allow the fan to run until all excess moisture has vented from the bathroom.
- Use the exhaust fans in your kitchen when cooking or while the dishwasher is running and allow the fan to run until all excess moisture has vented from the kitchen.
- Ensure that your clothes dryer vent is operating properly, and clean the lint screen after every use.
- When washing clothes in warm or hot water, watch to make sure condensation does not build up within the washer and dryer closet; if condensation does accumulate, dry with a fan or towel.

Cleaning and Maintenance

- Clean and dust your apartment on a regular basis as required by your lease. Regular vacuuming, mopping, and use of environmentally safe household cleaners is important to remove household dirt and debris that contribute to mold growth.
- Periodically clean and dry the walls and floors around the sink, bathtub, shower, toilets, windows and patio doors using a common household disinfecting cleaner.
- On a regular basis, wipe down and dry areas where moisture sometimes accumulates, like countertops, windows and windowsills.
- Use care when watering houseplants. If spills occur, dry excess water immediately.
- Thoroughly dry any spills or pet urine on carpeting.
- Do not overfill closets or storage areas. Ventilation is important in these spaces.
- Do not allow damp or moist stacks of clothes or other cloth materials to lie in piles for an extended period of time.

Reporting Problems

- Immediately report to the management office any evidence of a water leak or excessive moisture in your apartment, storage room, garage, or any common area.
- Immediately report to the management office any failure or malfunction with your heating, ventilation, air-conditioning system, or laundry system. As your lease provides, do not block or cover any of the heating, ventilation or air-conditioning ducts in your apartment.
- Immediately report to the management office any inoperable windows or doors.
- Immediately report to the management office any musty odors that you notice in your apartment.

Portions used with the permission of the National Multi-Housing Council, Inc and the California Department of Health Services

TOOL Lease Provision or Addendum Tips

Tenants must be informed of the risks associated with mold and their obligations to reduce these risks. Following are points to be addressed in the lease itself or in an addendum.

Tenant responsibility/acknowledgement:

- Acknowledgement by the tenant of his/her obligation to take measures to prevent moisture accumulation and mold growth, including appropriate climate control, regular cleaning, removal of visible moisture accumulations, and clearing all vents and ducts from obstructions.
- Acknowledgement by the resident that he/she has received the information regarding mold and actions to mitigate its risk.
- Tenant's agreement to promptly report leaks, moisture or visible evidence of mold growth in his/her unit, malfunction of HVAC or laundry equipment in the unit, plumbing leaks, any water accumulation due to leaks.

Portions used with the permission of the National Multi-Housing Council, Inc

TOOL Initial Resident Letter

Residents must be kept informed as observations are made and as actions are taken.

Property Name
Property Manager or Contact Person
Address
Phone Number

Date:

To: Resident(s) Name
Building / Unit # _____

From: Property Manager's Name

Re: Moisture and Mold Inspection Results

Dear Resident(s),

It has been (insert appropriate time) days since we inspected (and/or treated) your apartment. We hope that all of your concerns have been addressed (and/or remedied) to your satisfaction.

Please refer to the attached information, which contains information about mold and useful tips for preventing mold growth in your apartment home.

If you notice any evidence of moisture intrusion or mold growth in your apartment, please immediately notify the management office.

Sincerely,

Property Manager

Attachment (Resident Tip Sheet)

Portions used with the permission of the National Multi-Housing Council, Inc.

TOOL Follow-Up Resident Letter

Residents must be kept informed as observations are made and as actions are taken.

Property Name
Property Manager or Contact Person
Address
Phone Number

Date:

To: Resident(s) Name
Building / Unit # _____

From: Property Manager's Name

Re: Moisture and Mold Follow-Up

Dear Resident(s),

Following our initial remediation on (insert date) of moisture (and/or mold) in your apartment, we have re-inspected to ensure that the problem has been solved. As of (insert date of re-inspection), no evidence of moisture or mold was found in your apartment. We hope that all of your concerns have been addressed to your satisfaction.

Thank you for your cooperation with this issue. If this problem recurs, or if you notice any other evidence of moisture intrusion or mold growth in your apartment, please immediately notify the management office.

Sincerely,

Property Manager

Portions used with the permission of the National Multi-Housing Council, Inc.

TOOL INTERIOR Inspection Checklist – Building _____, Unit _____, Observation Date _____

All of the areas noted on the checklist must be routinely checked by trained staff for each unit in the building. Once the unit has been inspected, the property manager must keep this documentation on file at the subject property. (Portions used with the permission of the National Multi-Housing Council, Inc.)

Basement (note signs of mold or moisture)	Identify Issue	Date Corrected
Check floor		
Check ceiling or structure above		
Check stairs		
Check windows		
Check exterior doors		
Check all equipment rooms		
Interior entry (note signs of mold or moisture)	Identify Issue	Date Corrected
Check door surfaces		
Check inside closets		
Check windows		
Check all baseboards		
Check walls and ceilings		
Check flooring		
Check carpet, including tack strip in corners		
Living room (note signs of current or past moisture)	Identify Issue	Date Corrected
Check inside closets		
Check doors		
Check windows		
Check all baseboards		
Check walls and ceilings		
Check flooring		
Check carpet, including tack strip in corners		
Check fireplace		
Attic (note signs of current or past moisture)	Identify Issue	Date Corrected
Check underside of roofs, especially at roof intersections		
Check ridge and gable vents		
Check all roof penetrations		
Check any plumbing lines/risers		
Check dormers		

Kitchen (note signs of current or past moisture)	Identify Issue	Date Corrected
Check inside cabinets		
Check sink		
Check faucets		
Check flooring		
Check walls and ceilings		
Check doors		
Check windows		
Check refrigerator		
Check icemaker (connections)		
Check dishwasher (underneath)		
Check waste disposal		
Bathrooms – Indicate locations (note signs of current or past moisture)	Identify Issue	Date Corrected
Check sinks		
Check bathtubs/showers		
Check toilets		
Check inside cabinets		
Check shelving		
Check flooring		
Check walls and ceilings		
Check interior doors		
Check windows		
Check bathroom exhaust fans		
Hallways (note signs of current or past moisture)	Identify Issue	Date Corrected
Check walls and ceilings		
Check interior doors		
Check windows		
Check carpet, including tack strip in corners		

Bedrooms - Indicate locations (note signs of current or past moisture)	Identify Issue	Date Corrected
Check windows		
Check sliding doors		
Check carpet, including tack strip in corners		
Check closets		
Additional rooms - Indicate locations (note signs of current or past moisture)	Clean	Date Corrected
Check windows		
Check carpet, including tack strip in corners		
Check closets		
HVAC (note signs of mold or moisture)	Identify Issue	Date Corrected
Check operation		
Check air circulation		
Check thermostat		
Check evaporator coil		
Check condensate pan		
Check condenser coil		
Check condenser fan motor		
Check furnace		
Check baseboard heaters		
Check all vents		
Change filters		
Laundry and Utilities (note signs of mold or moisture)	Identify Issue	Date Corrected
Check washing machine		
Check hoses		
Check dryer		
Check dryer vent		
Check water heater (all fittings)		
Check common area storage provided for this unit		
Check common areas		

TOOL EXTERIOR / HVAC Inspection Checklist – Building _____, Observation Date _____

(Portions used with the permission of the National Multi-Housing Council, Inc.)

All of the areas noted on the checklist must be routinely checked by trained staff. Once the building has been inspected, the property manager must keep this documentation on file at the subject property.

Building exterior	Identify Issue	Date Corrected
Check foundation		
Check gutters / down spouts		
Check stairs		
Check landscaping at building perimeter		
Check exterior utility closet		
Check irrigation system		
Check roof		
Check caulk around windows and doors and connecting corner trim		
Check mortar and bricks for damage		
HVAC	Identify Issue	Date Corrected
Check operation		
Check air circulation		
Check thermostat		
Check evaporator coil		
Check condensate pan		
Check condenser coil		
Check condenser fan motor		
Check furnace		
Check baseboard heaters		
Check all vents		
Change filters		
Patio / Balcony	Identify Issue	Date Corrected
Check roof		
Check exterior doors		
Check deck surface		
Check storage closet		
Check exterior paint		

TOOL EPA Table 1

All water intrusion and associated damage must be addressed per EPA guidance. The Table below may change from time to time and the current resource should be sought from the EPA.

Water Damage – Cleanup and Mold Prevention	
Guidelines for Response to Clean Water Damage within 24-48 Hours to Prevent Mold Growth ^A	
Water-Damaged Material ^B	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 ^C	<ul style="list-style-type: none"> • Remove water with water extraction vacuum. • Reduce ambient humidity levels with dehumidifier. • Accelerated 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 ^C (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, fans, 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.

- A. If mold growth has occurred or materials have been wet for more than 48 hours, consult Table 2 guidelines. Even if materials are dried within 48 hours, mold growth may have occurred. Items may be tested by professionals if there is doubt. Note that mold growth will not always occur after 48 hours; this is only a guideline. 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 Personal Protective Equipment and containment are required by OSHA. An experienced professional should be consulted if you and/or your remediators do not have expertise remediating in contaminated water situations. Do not use fans before determining that the water is clean or sanitary.
- B. If a particular item has high monetary or sentimental value, you may wish to consult a restoration/water damage specialist.
- C. 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.

U.S. EPA, *Mold Remediation in Schools and Commercial Buildings*, March 2001 (updated June 2001).

TOOL EPA Table 2

All mold remediation must be conducted per EPA guidance. The Table below may change from time to time and the current resource should be sought from the EPA.

Guidelines for Remediating Building Materials with Mold Growth Caused by Clean Water ^A			
Material or Furnishing Affected	Cleanup Methods ^B	Personal Protective Equipment	Containment
SMALL – Total Surface Area Affected Less than 10 square feet			
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 and drapes	1, 3		
Wallboard (drywall and gypsum board)	3		
Wood surfaces	1, 2, 3		
MEDIUM – Total Surface Area Affected Between 10 and 100 square feet			
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 and drapes	1, 3, 4		
Wallboard (drywall and gypsum board)	3, 4		
Wood surfaces	1, 2, 3		
LARGE – Total Surface Area Affected Greater than 100 square feet 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 exposure and size of contaminated area	Full 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, 4		
Non-porous, hard surfaces (plastics, metals)	1, 2, 3		
Upholstered furniture and drapes	1, 3, 4		
Wallboard (drywall and gypsum board)	3, 4		
Wood surfaces	1, 2, 3, 4		

A. Use professional judgment to determine prudent levels of Personal Protective Equipment and containment for each situation, particularly as the remediation site size increases and 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 Personal Protective Equipment and containment are required by OSHA. An experienced professional should be consulted if you and/or your remediators do not have expertise remediating in contaminated water situations. Do not use fans before determining that the water is clean or sanitary.

EPA Table 2 (concluded)

- B.** 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 a well-sealed plastic bags.

Method 4: Discard – 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.

U.S. EPA, Mold Remediation in Schools and Commercial Buildings, March 2001 (updated June 2001).

TOOL Incident Tracking Log

All issues, repairs, and remediation actions must be tracked and recorded.

Building / Unit #	Chronology	Date / Time	Reported by / Action Taken by	Description of Issues and Actions
	Initial Situation Identified			
	Actions Taken			
	Initial Tenant Correspondence			
	Follow-Up Inspection			
	Follow-Up Tenant Correspondence			
	Initial Situation			
	Actions Taken			
	Initial Tenant Correspondence			
	Follow-Up Inspection			
	Follow-Up Tenant Correspondence			

TOOL Event Checklist

All observations and actions taken must be recorded and kept on site. Attach additional information to this document as appropriate. This document may need to be revisited over the span of several weeks to ensure that all requirements have been fulfilled.

Building Name: _____

Unit Number: _____

Date Notified: _____

Description of event:

Steps taken to alleviate problem:

Indicate with N/A
or checkmark

Responded to problem within 24 hours. (Date: _____)

Documented event with Event Checklist and Incident Tracking Log. Document steps taken to alleviate the problem. Initial Resident Letter sent. (Date: _____)

Follow-up inspection seven days after the event. Follow-up Resident Letter sent. (Date: _____)

Re-inspect after next significant rainfall to ensure problem has been solved (if applicable). (Date: _____)

Schedule an annual inspection for this unit. (Date: _____)

TOOL Materials and Equipment List

Maintenance staff and management must be prepared to deal with water intrusion and mold events as they occur. The following equipment is available at most supply stores. The MMP must document what materials are kept readily available and how this inventory is maintained.

1. Wet vacuum
2. High efficiency particulate air (HEPA) filtered vacuum cleaner
3. Blowers or fans (have on site or know where to rent)
4. Dehumidifiers (have on site or know where to rent)
5. Disinfectant or bleach and standard cleaning detergents
6. Disposable scrub brush, sponges, and cloths
7. Plastic spray cleaning bottles
8. Localized containment bag (2-glove bags)
9. Disposable clothing (1 box)
10. N-95 disposable respirators (5 pack)
11. 6-mil disposable bags (1 box)
12. 6-mil polyethylene sheeting (2 rolls)
13. Yellow caution tape (3 rolls)
14. Moisture meter (optional)

See the Contact List for information on where to buy or rent materials.

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TOOL Contact List

Maintenance staff and management must be prepared to deal with water intrusion and mold events as they occur. The MMP must include up-to-date information on resources that are not readily available on site.

Contact at Servicer

For questions about implementing the Moisture Management Plan, and for notification of mold contamination that cannot be addressed by in-house maintenance staff:

Name: _____
Phone: _____
Address: _____

Mold Remediation Assistance

Contractors to respond to mold contamination that cannot be addressed by in-house maintenance staff:

Company: _____
Contact Name: _____
Phone: _____

Company: _____
Contact Name: _____
Phone: _____

Rental Equipment

Access to special equipment not kept on site, such as blowers and dehumidifiers:

Company: _____
Phone: _____
Equipment Available: _____

Company: _____
Phone: _____
Equipment Available: _____

Equipment Purchasing

Companies used for purchasing special supplies such as disposable clothing, respirators, cleaning supplies, and plastic sheeting:

Company: _____
Phone: _____
Equipment Available: _____

Company: _____
Phone: _____
Equipment Available: _____
