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The University of Rhode Island Mold Prevention and Remediation Protocol

Effective Date: September 2023

INTRODUCTION

The University of Rhode Island (URI) is committed to protecting the health and safety of all students, faculty, staff, visitors, and volunteers.

Mold contamination in the indoor environment is a complex issue. There is scientific uncertainty regarding health effects associated with exposure to mold, however the US Centers for Disease Control and Prevention (CDC), the Institute of Medicine, the World Health Organization (WHO), and Health Canada all agree that living and working in a building or space impacted by mold results in increased respiratory concerns, including allergic reactions.

This Mold Remediation and Prevention Protocol (“Protocol”) presents useful guidelines that can be employed by students, faculty, and staff to help identify mold, and conditions that can lead to mold growth. The Protocol also delineates procedures that must be followed by all University employees and contractors who share responsibility for mold prevention and remediation.

Mold can be found anywhere moisture and oxygen are present. Mold can grow on virtually any organic substance, including wood, paper, cardboard, dust, and insulation. When excessive moisture accumulates in buildings or building materials, mold growth will often occur, particularly if the environment contributing to mold growth remains undiscovered or is left unaddressed.

It is impossible to eliminate all mold and mold spores in an indoor environment. Indoor mold growth, however, can be controlled by controlling indoor moisture. Since mold requires moisture to grow, it is important to prevent excess humidity in buildings.

Various factors can contribute to moisture concerns in building interiors. Changes in building construction practices during the 1970s, 80s and 90s resulted in buildings that are tightly sealed and/or lack adequate ventilation. Not infrequently, older buildings were designed to pull in untreated air from the outside, thereby introducing excessive indoor humidity that is difficult to control. Here at URI, our water table is close to the surface, a factor that can promote excessive moisture buildup during warmer months, and when outside relative humidity adds to moisture control challenges.

When indoor humidity can’t be properly controlled, it may become trapped in building materials, including drywall, ceilings, books and paper, clothing, carpet and ceiling tiles, and this excessive moisture can lead to mold growth.

Interior moisture challenges are aggravated not only by deficient building design but by deferred maintenance. Leaking roofs, gutters, downspouts, doors and thresholds, and landscaping that

serves to direct water into or under buildings, can easily aggravate or cause humidity concerns in building interiors.

Foresight, vigilance, and best-practices methodologies can help prevent mold. URI is committed to ensuring that each member of the University community is made aware of common factors that contribute to mold growth; ways and means to control and prevent mold growth; and time-tested procedures to remediate mold, safely and effectively, whenever and wherever it is discovered.

Objective

The objective of this Protocol is to utilize prevention techniques to minimize the potential for mold and fungal growth; identify, control, and remediate areas containing mold and fungal growth; and protect the safety and health of all University students, employees, and visitors. This Protocol shall be used in conjunction with URI's Personal Protective Equipment ("PPE") and Hazard Communication Programs.

Applicability

This Protocol applies to Senior Leadership, Faculty and Staff, all University employees and URI-certified vendors who perform water damage restoration, and fungal and mold remediation of building components.

Responsibilities

Senior Leadership (Provost, Associate Provosts, and Assistant Provosts; Deans, Associate Deans, and Assistant Deans; Vice Presidents, Associate Vice Presidents, and Assistant Vice Presidents; and Department Chairs) is responsible for:

- Supporting and enforcing the written procedures for preventing, controlling, and remediating mold and fungal growth.

Faculty and Staff are responsible for:

- Supporting and enforcing the written procedures for preventing, controlling, and remediating mold and fungal growth.

Faculty and staff are integral members of this Protocol. The following information is intended to convey to Faculty and Staff quick, informative tips on mold prevention, and what to do if mold or water intrusion is visible in their work spaces.

It is of paramount importance that Faculty and Staff assist Facilities Operations, Environmental Health & Safety, Housing & Residential Life, and Health Services in doing everything in their power to assist in mold prevention and early detection.

Following are key items to practice in Faculty and Staff working spaces:

1. Do not block wall heating and cooling units with items that impede airflow.
2. Do not place items such as plants, fish tanks, or items that hold moisture on top of wall heating and cooling units.
3. Do not leave wet shoes, clothing, boxes, papers, or umbrellas on carpet, the presence of which can spur mold growth.
4. Always carefully clean up spills of any kind.
5. Remove trash and food containers from working areas as these items can provide food sources for mold.
6. Report all water intrusion or excessive humidity in your working space or other areas.
7. When interior humidity has the potential to be high, do not turn off air conditioners or cooling units when your work space is unoccupied, especially on nights and weekends.

Management (Maintenance & Repair and Custodial personnel in Housing and Residential Life, Facilities Operations, Dining Services, the Memorial Union, or Other Maintenance Personnel, and on all URI campuses, including Directors, Associate Directors, Assistant Directors, Managers) are responsible for:

- Supporting and enforcing the Protocol's processes and procedures for preventing, controlling, and remediating mold and fungal growth.

Immediate Supervisors (Facilities Operations Maintenance & Repair Shop Supervisors, and Maintenance & Repair Building Superintendents) are responsible for:

- Reporting any water leaks to the Facilities Operations Control Center for immediate corrective action;
- Locating the source of the moisture and eliminating the causative agent (i.e. steam line breaks, roof leaks, landscape deficiencies, condensation);
- Utilizing prevention techniques to minimize the potential for mold and fungal growth;
- Reporting all visible mold/fungal growth to the Facilities Operations Control Center, and to the immediate supervisors in their respective divisions/departments, before further action is taken;
- Reporting all visible mold/fungal growth in an HVAC system to the Facilities Operations Control Center before further action is taken;
- Ensuring that employees are aware of the possible health hazards associated with mold and fungus and providing to them proper PPE;

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- Ensuring employees attend required training sessions on PPE and Hazard Communication and;
- Enforcing the use of proper PPE and, where appropriate, taking appropriate action in the event an employee does not comply with the requirements of this Protocol.

Immediate Supervisors (Building Superintendents, Principal Janitors, and Senior Janitors) are responsible for:

- Reporting any water leaks to the Facilities Operations Control Center for immediate corrective action.
- Reporting to the Facilities Operations Control Centers all visible mold/fungal growth before further action is taken;
- Assisting Facilities Operations Maintenance and Repair personnel in locating the source of the moisture and eliminating or repairing the causative agent (i.e. steam line breaks, roof leaks, landscape deficiencies, condensation);
- Utilizing prevention techniques to minimize the potential for mold and fungal growth;
- Reporting all visible mold/fungal growth in an HVAC system to the Facilities Operations Control Center before further action is taken;
- Ensuring that employees are aware of the health hazards associated with mold and fungus and providing to them proper PPE;
- Ensuring employees attend required training sessions on PPE and Hazard Communication and;
- Enforcing the use of proper PPE and, where appropriate, taking appropriate disciplinary action in the event an employee does not comply with the requirements of this Protocol.

Frontline Hourly Staff (including Facilities Operations staff in the Paint Shop and Maintenance Trades Shops, Senior Maintenance Technicians, Housing and Residential Life Housekeepers, and Dining Services, Narragansett Bay Campus and Memorial Union custodial and maintenance personnel) are responsible for:

- Reporting any water leaks for immediate corrective action;
- Assisting in locating the source of the moisture and eliminating the causative agent (i.e. steam line breaks, roof leaks, landscape deficiencies, condensation);
- Utilizing prevention techniques to minimize the potential for mold and fungal growth;

- Reporting all visible mold/fungal growth to the Facilities Operations Control Center;
- Reporting all visible mold/fungal growth in an HVAC system to the Facilities Operations Control Center;
- Being cognizant of the health hazards associated with mold and fungus, and employing PPE when remediating mold;
- attending required training sessions on PPE and Hazard Communication;

Environmental Health and Safety is responsible for:

- Coordinating the mold remediation Protocol;
- Consulting with departments to determine whether URI certified vendors are needed to perform remediations, including destructive cleaning;
- Scheduling and performing indoor air quality (IAQ) testing when deemed necessary;
- Ensuring University employees attend required training sessions on PPE and Hazard Communication and;
- Enforcing the use of PPE and recommending that departments take appropriate disciplinary action in the event an employee does not comply with the Protocol requirements.

URI Vendors are responsible for:

- Evaluating and documenting the extent of damage due to water or mold in the building structure, systems and contents using appropriate monitoring and detection equipment;
- Designating a project leader or leaders, who shall work with the corrective department and Environmental Health and Safety during the entire project;
- Generate a remediation action plan, which, depending on the response activity, will include a timeline, goals and specific techniques to be employed by the vendor;
- Notifying the corrective department whenever circumstances require a deviation from the action plan;
- Documenting all activities and services performed in response to the water or mold concern, including moisture and humidity readings over time, where indicated;

- Completing the project in a manner that complies with all URI, federal and state regulations, and procedures.

Program Enforcement

A violation of a University employee's responsibility to adhere to the provision of this Protocol must be reported to the employee's immediate supervisor for appropriate action.

Definitions

Asbestos Bulk Sampling – Collection of a small portion of a suspect asbestos-containing building material collected for laboratory analysis to determine asbestos content.

Computerized Maintenance Management System (“CMMS”) – Software used by the Facilities Operations Control Center to plan, track, measure and optimize everything associated with the maintenance of equipment and building systems

Containment – An enclosure designed to control the release of mold or mold-containing dust or materials into surrounding areas in the building during remediation.

Destructive Cleaning Procedures – The demolition of drywall, ceilings, flooring and other-mold impacted building materials, often in the presence of containment, air scrubber and/or negative pressure.

Fungi – Very large group of organisms, including molds, yeasts, mushrooms and puffballs. There are more than 100,000 accepted fungi species.

Hazard Communication (“HazCom”) – Hazard communication, also known as HazCom, is a set of processes and procedures and URI implemented to effectively communicate to its employees the hazards associated with the handling, shipping and use of chemicals, and any form of exposure to these chemicals.

Indoor air - Air within the envelope of a building, including air in spaces normally occupied by persons in the building but excluding air in attics and crawl spaces that are vented to the outside of the building.

Indoor Air Quality (“IAQ”) – the quality of the air within a building, especially as it relates to the health and comfort of building occupants.

Indoor Air Quality Testing - An IAQ investigation which includes the collection of air quality measurements, microbial sampling, and a visual inspection. Air quality parameters tested include carbon dioxide, carbon monoxide, relative humidity and temperature. The examination of microbial samples collected during a mold assessment can be used for the purpose of

determining the presence/amount of mold inside a building relative to the presence/amount of mold outside a building.

Indoor mold - Mold contamination that was not purposely grown or brought into a building, and that has the potential to affect the indoor air quality of the building. Since mold requires water to grow, it is important to prevent excessive moisture in buildings.

Mold – A group of organisms that belongs to the kingdom “Fungi”. There are thousands of known species of molds. Mold may be allergenic, which means it is unlikely to cause illness (though it may aggravate mild allergies); pathogenic, which means it can cause infection in those with compromised immune systems; or toxigenic, which means it is toxic to all who come in contact with it. Molds can be found almost anywhere. They can grow on virtually any substance, providing moisture is present. There is no practical way to eliminate all mold and mold spores in the indoor environment. The most effective way to control indoor mold growth is to control moisture. There are many types of mold, and none of them will grow without water or moisture.

Mold Remediation - The removal, cleaning, sanitizing, demolition, or other treatment, including preventive activities, of mold or mold-contaminated matter. Preventive activities include those intended to prevent future mold contamination of a remediated area, including applying biocides or anti-microbial compounds.

Personal Protective Equipment (PPE) – gloves, goggles, respirators, disposable Tyvek suits and booties, ear protection, etc.

Preventive Maintenance (“PM”) - Routine maintenance performed on equipment or systems in order to maintain the manufacturers’ performance specifications and maintain the useful life of the equipment or systems.

Porous materials - Any component purposefully containing pores, voids or holes. Examples include fiberboard, ceiling tiles, insulation, wall coverings, carpet, leather, and wood products. Mold can grow on or fill in the empty spaces and crevices of porous materials, so the mold may be difficult or impossible to remove completely. Some absorbent or porous materials may have to be discarded if they become contaminated.

Implementation

The following section delineates and defines four categories of mold (incidental, and small, medium, and large affected areas) and provides information regarding the remediation measures mandated for each category. If an individual has questions relating to mold identification, prevention and control, and/or remediation, please contact Environmental Health and Safety immediately for assistance.

In instances where visible mold is present, indoor air testing is not necessary. If visible mold is present, it should be removed regardless of the mold species present. In instances where mold-impacted building materials require removal, asbestos bulk sampling may be required. Whenever there is doubt as to the correct course of action, contact Environmental Health and Safety for definitive guidance.

Categories of Mold Contamination:

1. Incidental Mold

- a. Limited visible contamination
- b. Not resulting from unexpected water intrusion or obvious moisture intrusion
- c. Examples include surface contamination that might be present in a naturally moist environment such as a residential housing restroom or shower, greenhouse, or food science facility with mold cultures, etc.
- d. Surfaces that can easily be cleaned in place

2. Small Affected Area

- a. Contaminated area is less than 10 square feet (<10 sq. ft.)
- b. Visible growth scattered in a small colony or colonies
- c. Growth on easy-to-access surfaces
- d. Most of the surfaces can be easily cleaned
- e. Small items can be easily removed and bagged without significant release of contaminants

3. Medium Affected Area

- a. Contaminated area is between 10 to 100 square feet
- b. Visible growth on porous or semi-porous materials; mold is light and spotty
- c. Mold covers 50 percent of non-porous materials
- d. There is a possibility of hidden contamination
- e. Destructive cleaning may be required

4. Large Affected Area

- a. Contaminated area is over 100 square feet (>100 sq. ft.)
- b. Heavy distribution of visible mold on any type of surface
- c. Hidden contamination is possible
- d. Contamination may be well-established (perhaps due to long-term water or moisture intrusion)
- e. Aggressive action is required to clean or remove contaminated surfaces
- f. Destructive cleaning may be required

HAZARD ASSESSMENT

Visual Inspection

The presence of mold, water damage, or musty odors must be addressed immediately, beginning with a visual inspection. Ventilation systems must be visually checked periodically to detect the presence of damp HVAC filters and excessive humidity. PMs are entered into the Facilities Operations Control Center CMMS work order system to ensure that equipment and system inspections are performed as required and scheduled.

Ceiling tiles, walls, flooring, cardboard and paper must also be visually inspected for mold growth. When visible mold growth is present, the remediation process must begin.

Indoor Air Quality Sampling (Air Monitoring)

In most cases, if visible mold growth is present, sampling is unnecessary. Depending on the circumstances, mold sampling may not be recommended for the following reasons:

- Mold will always be found in testing. It is everywhere and there will always be some level of mold present in results.
- Sampling for mold does not assess health risk.
- Mold testing is not standardized.
- There are no State or Federal laws that set limits or standards as to what types or levels of mold presence/exposure are healthy or unhealthy.
- Cleanup methods are the same regardless of the type of mold.

Instead, careful detailed visual inspection and recognition of mold odors should be used to find problems needing correction. Efforts should focus on areas where there are signs of moisture or water vapor (humidity) or where moisture problems are suspected. The investigation goals should be to locate indoor mold growth to determine how to correct the moisture problem and remove contamination safely and effectively.

The CDC and EPA do not recommend testing as there are no governmental exposure-base standards to use for evaluation of the sampling results. Therefore, mold testing cannot be used to make determinations on a building's safety or inhabitability. If indoor air testing is necessary to provide specific information to guide remedial activities or to address specific medical and health concerns of patients, the URI Department of Environment Health and Safety will initiate this action. Indoor air quality sampling may also be conducted to determine the effectiveness of the remediation by verifying that airborne concentrations of mold and fungal spores are similar to ambient or outdoor air. If air testing is performed, outdoor air samples must also be collected for comparative purposes. Since mold has a natural presence in outdoor air year-round and airborne mold spores are everywhere, even a building that does not have a mold "problem" will have some mold spores.

WATER DAMAGE CLEAN UP AND MOLD PREVENTION

Prevention Tips

The key to the control of mold and fungus growth is controlling indoor humidity, eliminating water intrusion, and drying, cleaning and/or removing impacted materials and contents within 24-48 hours. The following tips must be followed to prevent mold and fungal growth:

- Repair leaky plumbing and leaks in the building envelope as soon as possible.
- Watch for condensation and wet spots. Address the source of the moisture problem as soon as possible.
- Prevent moisture due to condensation by increasing surface temperature or reducing the moisture level in the air (humidity). To increase surface temperature, better-insulate cold areas or increase air circulation.
- To reduce the moisture level in the air, repair leaks, increase ventilation (if outside air is cold and dry), or dehumidify the area (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), but ideally between 30-50%, if possible.
- Perform regular building/HVAC inspections and maintenance as part of scheduled preventative maintenance, including replacement of wet filters.
- Clean and dry wet or damp spots within 48 hours.
- Remediate wet foundations and standing water around buildings.
- Don't let foundations remain wet. Provide drainage and slope the ground away from the foundation.
- Clean with non-phosphate detergents (any phosphate residue is food for mold)
- Do not install vinyl wallpaper on walls. Vinyl wallpaper inhibits drying.
- Follow the EPA recommended guidelines for response to water damaged materials to prevent mold growth as listed in Table 1 below:

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, 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.
<p>*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.</p> <p>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 the Occupational Safety and Health Administration (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.</p> <p>[†] If a particular item(s) has high monetary or sentimental value, you may wish to consult a restoration/water damage specialist.</p> <p>[‡] 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.</p>	

Source - U.S. Environmental Protection Agency. *Mold Remediation in Schools and Commercial Buildings* EPA 402-K-01-001. www.epa.gov/mold

Best Management Practices

1. Close all doors and restrict general access to the workplace while remediation is being performed.
2. Where possible, perform remediation work during hours of minimal building occupancy, such as nights or weekends.
3. Shut down HVAC systems in the impacted areas, and areas immediately adjacent to impacted areas, or cover HVAC returns where applicable or possible.
4. Close windows in the impacted area and turn off portable fans.
5. Use containment barrier, air scrubbing and/or negative pressure where indicated.
6. Once mold-contaminated materials have been sealed in plastic bags and removed from buildings, the waste can be disposed of as regular trash. No special labeling or disposal requirements are necessary.

REMEDICATION

The following sections are guidelines for mold growth remediation. Employees are encouraged to use them to ascertain whether a given mold growth concern can be safely and effectively remediated by URI employees, or whether the mold must be remediated by contracted URI vendors. In any case, Environmental Health and Safety must be kept apprised of all mold concerns and is responsible for coordinating communications with occupants in impacted spaces.

Incidental Mold and Small Affected Areas (limited visible contamination less than 10 sq. ft.)

URI staff may conduct remediation, using wet methods, under the following conditions:

- Mold/fungal growth remediation does **not** require destructive cleaning procedures and/or;
- Mold/fungal growth to be remediated is **not** located in a HVAC system.

The area must be unoccupied during cleaning. Vacating people in the adjacent work area is not necessary.

Periodic PPE and Hazard Communication training will cover personal protection and potential health hazards. Custodial staff will also receive training on proper clean-up methods. Gloves

and goggles are required during remediation. Employees should consult the Safety Data Sheet provided for each cleaning chemical used to determine which types of PPE are required.

An N95 respirator mask may also be used on a voluntary basis. If an employee must wear a respirator to perform their task, including N95 masks, the employee falls under the URI Respiratory Protection Program and all its requirements. Personnel intending to use/wear a respirator mask must be trained and fit-tested by Environmental Health and Safety and should email srm@etal.uri.edu for more information.

Medium Affected Areas (contaminated areas from 10 to 100 sq. ft.)

URI-certified vendors shall perform Level 3/Medium-scale remediations, except in instances where the mold coverage is light and destructive cleaning is not required. In these instances, a determination may be made by Custodial Services supervisory staff that the mold may be safely and effectively remediated by URI employees. Environmental Health and Safety must be apprised of the remediation before the project commences. The level of PPE will be determined on a case-by-case basis. Respiratory protection must be used in accordance with OSHA's respiratory protection standard. The impacted area, and areas directly adjacent to it, must be unoccupied during cleaning. As the occasion requires, further vacating of those occupants near the work site is recommended whenever it is known that (1) an individual is known to have a compromised immune system (2) an individual has experienced recent surgery (3) an infant is present (4) an individual has chronic inflammatory lung diseases or respiratory health concerns. Communication with building occupants will be coordinated by Environmental Health and Safety. Projects of this scope will often require the erection of containment barriers and the use of air scrubbing and/or negative pressure.

Large Affected Areas (contaminated area is more than 100 sq. ft.)

Only URI-certified vendors shall be permitted to perform Level 4/Large-scale remediations. Environmental Health and Safety must be apprised of the remediation before the project commences. Full PPE must be worn by contractors and URI personnel, including the use of N95 filters or full-face respirators with HEPA filters. Respiratory protection must be issued in accordance with OSHA's respiratory protection standard. The mold-impacted area(s), and areas directly adjacent to the mold-impacted area(s), must be unoccupied during the remediation process. Projects of this scope will often require the erection of containment barriers. As the occasion requires, further vacating of other areas near the work site is recommended whenever it becomes known that (1) an individual is known to have a compromised immune system (2) an individual has undergone recent surgery (3) an infant or child is present (4) an individual has chronic inflammatory lung diseases or other respiratory health concerns. Communication with building occupants will be coordinated by Environmental Health and Safety.

Table 2: Guidelines for Remediating Building Materials with Mold Growth Caused by Clean Water*

Material or Furnishing Affected	Cleanup Methods ¹	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 and 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 and 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 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 & drapes	1, 3, 4		
Wallboard (Drywall and gypsum board)	3, 4		
Wood surfaces	1, 2, 3, 4		

Table 2 continued

*Use professional judgment to determine prudent levels of Personal Protective Equipment 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—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.

Table developed from literature and remediation documents including *Bioaerosols: Assessment and Control* (American Conference of Governmental Industrial Hygienists, 1999) and *IICRC S500, Standard and Reference Guide for Professional Water Damage Restoration* (Institute of Inspection, Cleaning and Restoration, 1999); see Resources List for more information.

RELEASE OF RECORDS

The formal release of documentation in the form of indoor air quality lab reports, remediation plans and reports, etc., is controlled by the Rhode Island Access to Public Records Act.

The provisions of this Act do not prevent designated URI personnel from openly discussing with impacted parties - by phone, emails, or in person - information relating to lab reports or remediation. In all cases, Environmental Health & Safety shall possess the ultimate responsibility for interpreting and enforcing the terms of this Protocol document per the University's Policy on Environmental Health and Safety.

RESPONSE AND COMMUNICATION

1. RECEIPT OF COMPLAINT OR CONCERN

All initial complaints or concerns impacting administrative, classroom, farm and athletic buildings shall be reported to the Facilities Operations Control Center for corrective action.

All initial complaints and concerns impacting residence halls shall be reported to the Housing and Residential Life Office, at which point designated Housing and Residential Life staff will communicate with the student and/or parent; schedule onsite inspection of the space; and follow-up as required.

2. ONSITE INSPECTION AND INVESTIGATION

The inspection personnel should consist of at least one or more managerial or supervisory staff from the corrective department or party.

3. COMMUNICATION

If any remediation is to be performed, all affected individuals shall be notified by the corrective party and/or URI Environmental Health and Safety. The notification must include a description of the remedial measures and a timetable of completion. Individuals with health problems that appear to be related to bioaerosol exposure should be advised to see a physician if they experience reactions thought to be tied to the exposure. Communication with building occupants will be coordinated by Environmental Health and Safety.

CONTACT LIST

Facilities Operations Control Center	401-874-4060	401-874-2480
Environmental Health and Safety	401-874-7993	401-874-5500
Custodial Services	401-874-2868	
Housing and Residence Life	401-874-4151	
Health Services	401-874-2246	
URI Non-Emergency (Public Safety Dispatch)	401-874-4910	
Dining Services	401-874-2055	
Facilities Operations - Narragansett Bay Campus	401-874-6584	
Memorial Union	401-874-2056	

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