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Water Intrusion

Standard Operating Procedure

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1. Purpose

The purpose of this document is to provide information concerning water intrusion events, such as flooding, high ambient humidity, and ground and surface run-off, and steps needed for a successful response.

2. Scope

Water intrusion events can create a range of physical and health hazards, such as slips/trips/falls (STF's), shocks, mold, illness or infections. They can also cause serious damage to equipment and building materials.

Successful water intrusion response may require close cooperative interactions between many individuals and departments. Regardless of the source, prolonged exposure to such events can create an environment suitable for growth of micro-organisms, such as mold, mildew, bacteria or viruses, which can lead to illness.

These issues may be prevented if repair, clean up and drying of water intrusion events occur within a timely manner. If consultation is needed, please contact the Office of Environmental Health and Safety (OEHS) at 617.287.5445 or via email at umbehs@umb.edu. This procedure applies to all individuals on the University of Massachusetts Boston (UMB) property; however, some departments, such as the OEHS and Facilities, have a larger role than others. This procedure does not extend to the Residence Halls.

3. Precautions and Hazards

Prior to commencing clean-up activities, affected areas should be reviewed for potential safety hazards, such as STF's, electrical hazards, mold or other unsafe conditions. In addition, building materials that were damaged or may need to be disturbed as part of clean-up should be assessed for additional hazards, such as asbestos or lead-based paint. Further precautions outlined below should also be taken:

- The water source should be assessed to determine Category level.
- All affected or potentially affected electrical equipment should be either removed or turned off, unplugged, moved to a higher elevation and covered with plastic.
- Employees should leave the affected area(s) unless told otherwise by OEHS or Facilities.
- During clean-up, all equipment used for drying that is plugged into outlets must be ground-fault circuit interrupter (GFCI) protected.
- Tripping hazards created by electrical cords from drying equipment such as fans, blowers and dehumidifiers should be minimized, where possible.
- Do not alter, unplug, or turn off any, drying equipment used for clean-up unless told to do so, as these are present to prevent mold growth and permanent water damage.

4. Procedure

4.1 First 48 Hours

In the event of water intrusion into build areas, remediation within 24 to 48 hours is critical for the prevention of mold growth and worsening health hazards. The following steps should be taken:

1. **Identify the source of the water**: Following the discovery of water intrusion into building spaces, the first step is to identify the source of water and the category of the water damage:
    a. **Category 1**: Originates from a clean source, such as rain or a pipe, and poses the minimal health risks.
    b. **Category 2**: Sometimes referred to as "Gray Water", contaminated water that poses a moderate health risks due to infection or disease.

Contamination could be a result of initial water intrusion release or microbial growth due to water stagnation.

c. **Category 3**: Sometimes referred to as “Black Water”, infectious water that poses severe health risks. Water is highly contaminated and is likely to contain highly infectious viruses, bacteria and parasites.

If the water source appears to be Category 2 or Category 3, contact OEHS immediately for guidance.

2. **Prevent further water intrusion**: Water intrusion should be stopped by repairing, or otherwise stopping, the water intrusion at its source.

3. **Document damage**: Conduct an assessment and document all areas, building materials and furnishings affected by the water intrusion event.

4. **Determine whether materials are “dry”**: Response equipment will include moisture monitoring and evaluation equipment. If materials are wet, restorative drying equipment, such as dehumidifiers or air movers, should be used. Water intrusion clean-up strategies for common materials are summarized in section 4.2 of this document.

4.2 Water-Damage Clean-Up Guide

Guidelines for response to clean up water damage and to help prevent microbial growth. Please note that these guidelines are only for response to water intrusion events that can be verified as Category 1, as outlined in Section 4.1.1a:

Water-Damage Material	Recommended Action(s)	Responsible Party
Books and papers	- For non-valuable items: Discard - Photocopy valuable/important items and discard the original(s) - Freeze (in frost-free freezer or freeze-dry	Department/Individuals
Carpet and backing (dry within 24-48 hours)	- Remove water with water extraction vacuum - Reduce ambient air humidity levels with dehumidifiers	Facilities

	- Accelerate the drying process with fans - Ensure the subfloors (under carpets) are dry	
Ceiling tiles (dry within 24-48 hours)	- Reduce ambient air humidity levels with dehumidifiers - Accelerate the drying process with fans - Discard and replace if drying is not possible	Facilities
Cellulose Insulation	- Discard and replace	Facilities
Concrete or cinder block surfaces	- Remove water with water extraction vacuum - Accelerate drying process with dehumidifiers, fans, and/or heaters	Facilities
Fiberglass insulation	- Discard and replace	Facilities
Hard surface, porous flooring (linoleum, ceramic tile, vinyl)	- Vacuum or damp wipe with water and mild detergent and allow to dry, scrub if necessary - If suspected to need attention, check to make sure sub-flooring is dry. Dry sub-flooring if necessary	Facilities
Non-porous, hard surfaces (plastics, metals)	- Vacuum or damp wipe with water and mild detergent and allow to dry, scrub if necessary	Facilities
Upholstered furniture	- 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, consult with a	Facilities

	restoration/water damage professional	
Wallboard (drywall and gypsum)	- 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 and safe to do so. Do not direct fans toward contaminated (i.e. asbestos, mold, etc.) building materials	Facilities
Window drapes	- Follow laundering or cleaning instruction	Facilities
Wood surfaces	- 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	Facilities

If mold growth has occurred, or if you know or suspect that the water source is contaminated with sewage or with chemical/biological pollutants, contact OEHS. Additionally:

1. If a particular item(s) has high monetary or sentimental value, departments may wish to consult a restoration/water damage professional

2. 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.

4.3 Post-Restoration Verification

After 48 hours, Facilities should ascertain the level of damage to building surfaces and materials and determine if replacement or repairs are

immediately needed. OEHS may be requested to assist with this assessment and provide moisture meter readings. For Category 1 events, removal and replacement of damaged surfaces and materials can be minimized by drying the affected area within 24-48 hours, and even potentially up to 72 hours depending on the time of year and ambient humidity levels. It is particularly important to remove water completely from carpeting within this time frame because mold will begin to form readily; however, if this is not possible or if the carpeting and/or backing is damaged from mold, then it may need to be removed and replaced. Where building materials and surfaces require removal or more aggressive cleaning, it is essential to communicate the work needs with occupants and provide temporary relocation, as necessary.

4.4 Guidance on Water Intrusion after 48 Hours

When water intrusion has remained uncorrected or building materials are not “dry” after 48 hours, mold growth is likely. There may be visible evidence of growth or there may be a moldy, damp smell. Recommendations for cleanup or remediation by OEHS will depend on the extent of the damage, the types of materials affected and the presence/type of mold growth. OEHS will also make recommendations on whether current occupants should be relocated, determine containment/cleanup methods to be used (including whether remediation can be done by in-house personnel or if professional contractors are required) and on the types of PPE required for clean-up. In the event that mold growth is suspected or discovered, refer to OEHS SOP on Mold Remediation.

5. Roles and Responsibilities

5.1 Office of Environmental Health and Safety

1. Respond to reported water related incidents involving suspected mold growth or other safety/health concerns

2. Assist Facilities Management with assessing extent of water intrusion

3. Respond to water intrusion complaints by building occupants and investigates potential causes

4. Respond to events involving sewage backflows and/or other Category 2 or Category 3 water intrusion events

5. Provide training to Facilities employees and other UMB faculty and staff on water intrusion response and mold remediation

6. Communicate with building occupants and Facilities regarding health concerns

5.2 Facilities

1. Provide prompt clean up to water intrusion events using approved methods and PPE.

2. Assist in the cleaning and drying process using wet/dry vacuums, water extractors, fans, and industrial dehumidifiers. Disinfectant may also be used to clean up small areas of mildew and other microbial contaminated surfaces and objects.

3. Assist in the evaluation and repair of damages to building materials and furnishings and post-event return to normal operating conditions.

4. Coordinate departmental responses (i.e. Engineering, Contractors, OEHS, Trades, Custodial, etc.) to water intrusion events.

5. Provide routine maintenance on critical building systems to ensure appropriate indoor conditions and help prevent water intrusion events (i.e. clearing indoor plumbing and drainage systems, window repairs, roof and gutter inspections and repairs).

6. Ensure proper PPE availability to employees responding to water and/or mold condition.

6. References

N/A

7. Equipment and Supply Materials

7.1 Moisture Meter

8. Training

N/A

9. Definitions

Water Intrusion – Unwanted entry of water into a building, often causing damage and leading to problems such as leaks, mold and structural damage. Can be a result of several factors including: cracks, poor drainage, leaking and damage pipes, high indoor humidity or structural deterioration.

Mold – Naturally occurring micro-organism that compose of various types of fungi. While normally not an issue, concerns arise if mold appears indoors, as it can lead to health risks, such as allergic reactions or respiratory problems.

Mildew – A superficial coating of discoloration of organic material, caused by fungi, especially under damp conditions.

Ground Fault Circuit Interrupter (GFCI) – Safety device, most commonly used in outlets, that protects against electrical shocks by rapidly shutting off power when it detects a fault.

Water Source – Origin of water resulting in the water intrusion event.

Category 1 – Water that originates from a clean source that poses health risks to building occupants and clean-up crews. Water in Category 1 may include:

- Broken water supply lines
- Tub or sink outflows
- Melting ice/snow
- Rainwater

Category 2 – Water that contains a significant degree of contamination due to its source. Water is likely to have microbial growth due to initial release or water stagnation. Sometimes referred to as “Gray Water”, Category 2 water presents moderate health risks due to infection or disease. Water in Category 2 may include:

- Storm backup drains
- Treated cooling water
- Fire suppression systems

Category 3 – Water that is highly contaminated and poses severe health risks. Sometimes referred to as “Black Water”, this water is likely to contain highly infectious viruses, bacteria and parasites. Water in Category 3 may include:

- Sewage
- Flooding from rivers, lakes or streams

- Contaminated ground water containing pesticides, heavy metals or toxic organic substances

10. Recordkeeping

The most current version of this document and every SOP is to be maintained by OEHS.

11. Attachments

N/A

12. Approval Signature

	Zehra Schneider Graham OEHS Director	December 22, 2025
Approved by signature	Name, Title	Date