



West Virginia University

Environmental Health and Safety

**STANDARD OPERATING
PROCEDURES
FOR
MOLD REMEDIATION**

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1. Purpose:

To provide guidelines for remediating building materials contaminated with mold. It is the intent of Environmental Health & Safety (EHS) that all mold remediation be conducted as safely as possible.

2. Job Scope

If the quantity of surface area affected by the mold contamination is:

Less than 10 square feet: Remediation may be performed by properly trained in-house staff. Work must be performed in accordance with this guidance document.

Greater than 10 square feet: Contact EHS to conduct an assessment of the affected area. Facility Management (FM) should work with EHS to determine if contractors are needed.

Note: EHS should be consulted prior to any mold remediation work greater than 10 square feet that is located directly within an HVAC system, or if any materials are suspect asbestos containing building materials.

3. Definitions

- a) **Containment** - A component or enclosure designed or intended to control the release of mold or mold-containing dust or materials into surrounding areas in the building.
- b) **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.
- c) **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.
- d) **Mold** - Any living or dead fungi or related products or parts, including spores, hyphae, and mycotoxins.
- e) **Mold remediation** - The removal, cleaning, sanitizing, demolition, or other treatment, including preventive activities, of mold or mold-contaminated matter that was not purposely grown at a location. Preventive activities include those intended to prevent future mold contamination of a remediated area, including applying biocides or anti-microbial compounds.
- f) **Mold sampling**- The examination of a sample collected during a mold assessment for the purpose of:

- Determining the presence and/or amount of mold.
- Identifying the type of mold.

4. Roles/Responsibilities:

4.1. Environmental Health & Safety:

- Evaluate areas suspected to be contaminated by mold growth and provide recommendations to Facilities Management for remediation.
- Assist Facilities Management in identifying the underlying causes of water intrusion and mold growth and develop the appropriate response(s) to prevent recurrence.
- Assess conditions for occupancy after water restoration or mold remediation activities.

4.2. Facilities/Zone Management (FM):

- Shall identify and fix the source(s) of water leak(s) or intrusion.
- Shall arrange and manage contract services for water removal and restorative drying of affected structure.
- Shall notify EHS immediately when an area of suspected mold growth is discovered, in excess of 10 square feet, is located within HVAC equipment or any contaminated materials are suspected to be asbestos containing.

4.3. Contractor:

- Shall evaluate and document the extent of damage (e.g. water or mold) in the structure, systems and building contents using appropriate monitoring and detection equipment.
- Shall designate a project leader, representing the contractor, to work with EHS and Facilities Management personnel during the entire project.
- Shall provide EHS and FM representative a written action plan. Depending on the response activity, the action plan will include a timeline and goals for drying and the implementation of mold remediation techniques.
- The contractor must notify FM if situations arise that may require a deviation from the original action plan.
- Shall record and document all activities and services performed in response to the problem. For water restoration, records would include complete moisture readings.
- Shall complete the project in a manner which complies with all government regulations and procedures.

5. Procedure for mold remediation

Mold growth within an occupied building is indicative of a water problem. The cause of the water problem must be investigated and resolved to prevent remediating the same site multiple times. Likewise, when water is introduced into the indoor environment the affected area must be dried as soon as possible (within 24-48 hours) to avoid the promotion of mold growth.

Once the source of water problem is identified and eliminated, several methods for remediating visible mold growth are possible. Each situation will dictate which method is most appropriate.

5.1. Methods

- A. Method 1: Wet vacuum- steam cleaning may be an alternative for carpets and upholstery.
- B. Method 2: Damp wipe with plain water or with water/detergent solution, scrub as necessary. **Never mix bleach and ammonia. Toxic fumes may be produced. Detergent must be approved by FM.**
- C. Method 3: HEPA vacuum on thoroughly dry surfaces. Dispose of HEPA contents in a well-sealed plastic bag.
- D. Method 4: Discard contaminated material in a sealed plastic bag. HEPA vacuum area after material has been removed and then dispose of HEPA contents in a well-sealed plastic bag.

5.2. Personal Protective Equipment (PPE)

Employees engaging in the abatement of mold shall have the following PPE available for their use:

- Safety glasses/goggles
- N95 Respirator
- Disposable Coveralls
- Gloves

If an employee has questions concerning the appropriate PPE, they should contact their supervisor or EHS.

5.3. Work Area Containment

Containment of a work area for in-house work less than 10 sq. ft. will not likely be needed, but there are some precautions that will be required prior to performing actual remediation work.

For all mold remediation projects, general isolation will be required.

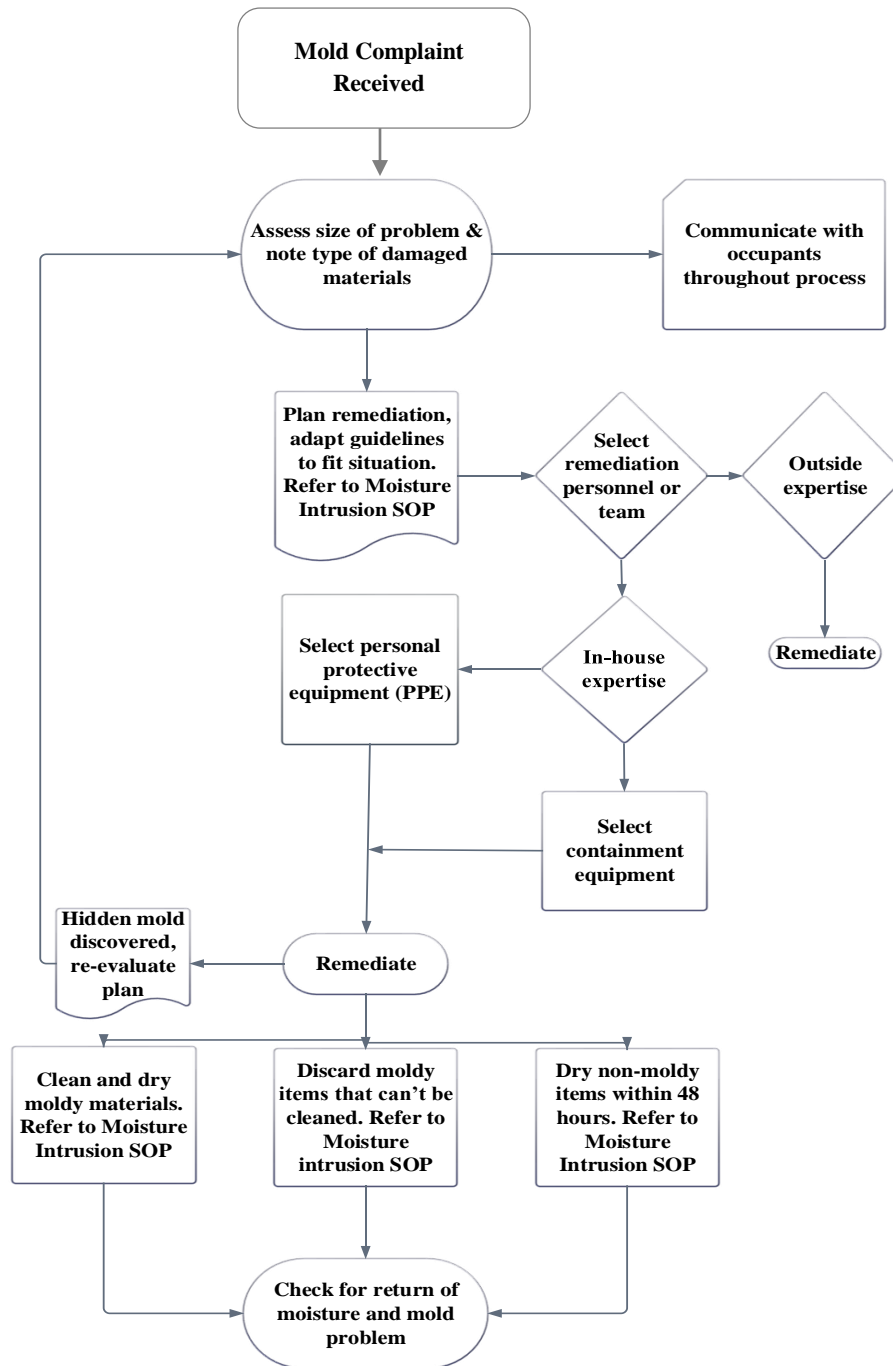
The following are best management practices:

- Close all doors and restrict general access to the workplace while actual remediation is being performed.
- If possible, perform work during hours of minimal building occupancy, such as nights or weekends.
- HVAC systems in the immediate area of the work shall be shut down and/or the HVAC returns shall be blanked off where applicable.
- Windows in the workplace should be closed and any portable fans shall be turned off.

5.4. Disposal

Once mold contaminated materials have been removed and sealed in plastic bags, waste can be disposed of as regular trash. No special labeling or disposal requirements are necessary.

5.5.Mold Response Plan Flow Chart



6. References

- Institute of Inspection, Cleaning and Restoration Certification (IICRC) IICRC S500, Standard and Reference Guide for Professional Water Damage Restoration, 2nd edition. 1999.
- Mold cleanup after the flood.
http://www.schoharierecovery.org/Cornell%20Mold_Cleanup_After_the_Flood.pdf
- Mold Inspection and Remediation Rules. Indoor Air Quality Program. HTML version of the file. <http://www.normi.org/docs-laws/NORMIRecommendedLicensingRegulationsFINAL.pdf>.
- New York City Department of Health, Bureau of Environmental & Occupational Disease Epidemiology. Guidelines on Assessment and Remediation of Fungi in Indoor Environments. 2000. HTML version of the file
<http://www.nyc.gov/html/doh/downloads/pdf/epi/epi-mold-guidelines.pdf>.
- The Ohio State University. Facilities Operations and Development. Indoor Flood Cleanup and Mold remediation Standard Operating Procedure (SOP)
- U.S. Environmental Protection Agency. Mold Remediation in Schools and Commercial Buildings EPA 402-K-01-001.
<http://www.epa.gov/iedmold1/table2.html>

7. Appendix

7.1. Guidelines for Remediating Building Materials with Mold Growth Caused by Clean Water (Refer to methods in section 5.1)

Material or Furnishing Affected	Cleanup Methods	Personal Protective Equipment	Containment
SMALL - Total Surface Area Affected Less Than 10 square feet (ft²)			
Books and papers	3	Recommended 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/occupant exposure and size of contaminated area	Full Use professional judgment, consider potential for remediator exposure and size of contaminated area
Carpet and backing	1,3,4		
Concrete or cinder block	1,3		
Hard surface, porous flooring (linoleum, ceramic tile, vinyl)	1,2,3,4		
Non-porous, hard surfaces (plastics, metals)	1,2,3		
Upholstered furniture & drapes	1,2,4		
Wallboard (drywall and gypsum board)	3,4		
Wood surfaces	1,2,3,4		