Carnegie Mellon University Environmental Health & Safety FIRE | LAB | WORK	**Environmental Health and Safety** **Mold Prevention and Remediation - Guideline**
Date of Issuance: 3/27/2019	**Revision Date:** 11/23/2023
Revision Number: 2	**Prepared by:** EHS

1. Purpose

Carnegie Mellon University has developed this guideline to cover mold prevention and remediation procedures. Mold assessment procedures are addressed in a separate guideline.

2. Scope

This guideline applies to buildings owned and operated by Carnegie Mellon University.

3. Definitions

a. **Approved contractor**: A certified contractor approved by Facilities Management and Campus Services (FMCS) to perform mold remediation services.
b. **HVAC**: Refers to heating, ventilation, and air conditioning systems.
c. **Mold**: A group of organisms that belong to the fungi kingdom. In the context of this document, mold refers to mold that has colonized a substrate and produced growth visible to the naked eye.
d. **Mold-contaminated materials**: Materials determined to be contaminated with mold through visual inspection, odor detection, or other sampling methods.
e. **Post-remediation verification**: An inspection performed by Environmental Health and Safety (EHS) following mold remediation. The inspection may include, but not be limited to: visual inspection, odor detection, air and surface sampling.
f. **Type 1 Mold Remediation**: Mold growth either localized or distributed covering less than 20 square feet and excluding HVAC contamination.
g. **Type 2 Mold Remediation**: Mold Growth either localized or distributed covering greater than 20 square feet and/or including HVAC contamination.

4. Roles and Responsibilities

a. Carnegie Mellon University EHS is responsible for:
   i. Developing the written mold prevention and remediation guidelines;
   ii. Evaluating suspected areas of mold contamination and identify response actions;
   iii. Partnering with FMCS to identify the underlying causes of mold contamination and identify strategies to prevent recurrence;

iv. Performing mold sampling as necessary;
v. Performing post-remediation verification;
vi. Maintaining all sampling and post-remediation documentation; and
vii. Periodically evaluating this guideline and updating as necessary.

b. Departments will be responsible for:
   i. Immediately reporting any water leaks or moisture buildup to FMCS Service Response (412)268-2910;
   ii. Reporting any visible or suspected areas of mold growth to EHS;
   iii. Incurring expenses associated with repair and replacement costs of mold-contaminated department-owned furniture, equipment, etc.; and;
   iv. Incurring expenses associated with repair and replacement of mold-contaminated furniture, equipment, etc. caused or likely caused by department owned equipment or items.

c. FMCS will be responsible for:
   i. Mitigating sources of water leaks and moisture accumulation;
   ii. Reporting any visible or suspected areas of mold growth to EHS;
   iii. Following mold remediation procedures described in Section 7 of this guideline;
   iv. Communicating with facility coordinators and/or building occupants in affected areas the status of mold remediation; and
   v. Using prevention techniques to eliminate the conditions conducive to mold growth.

d. Approved contractors will be responsible for:
   i. Complying with special conditions specified in vendor's contract;
   ii. Submitting work plans detailing methods and procedures used to complete the mold remediation to EHS as soon as possible;
   iii. Providing EHS with work changes or deviations from work plans as soon as practical as the changes arise; and
   iv. Notifying FMCS of project completion.

5. General Mold Prevention

The key to controlling mold growth is moisture control. All departments shall act promptly in response to recognized moisture issues within university facilities. Water infiltration shall be stopped and cleaned as soon as possible as is appropriate based on the type of water leak, e.g. domestic water, plumbing line, etc. The reason for leaks shall be identified and fixed to ensure that they do not reoccur. Drying efforts, cleanup, and removal of water damaged material shall be done within 48 hours of initial water infiltration to prevent mold growth.

a. The following is a list of mold prevention efforts for all groups identified in this guideline:
   i. Repair plumbing leaks and building envelope leaks as soon as possible;

ii. Fix all sources of recognized moisture problems as soon as possible;
iii. Keep roof drains clean and monitor flat roof systems during heavy rain events;
iv. Maintain indoor humidity levels between 30% and 70% relative humidity;
v. Inspect HVAC systems regularly for condensation and keep drip pans clean, flowing properly and unobstructed; and
vi. Promptly report any visible or suspected areas of mold growth to EHS;

b. The following is a list of mold prevention efforts for Departments:
   i. Promptly report evidence of water incursion or damage to FMCS at (412)268-2910. This would include, but not be limited to:
      1. Wet spots and evidence of condensation;
      2. Water stains to ceilings and ceiling tiles;
      3. Plumbing leaks;
      4. Increased humidity levels; and/or
      5. Other signs of water incursion
      (Please note, the reporting department may incur some costs based on the cause and nature of the water incursion and the type of occupancy in which the incursion occurred.)
   ii. Monitor temperature/humidistat gauges in temperature-controlled rooms;
   iii. Limit fungal food sources such as cardboard, paper, Styrofoam, and wood inside temperature-controlled rooms;
   iv. Keep doors and windows to temperature-controlled rooms closed at all times;
   v. Periodically clean surfaces in temperature-controlled rooms with an EPA registered disinfectant;
   vi. Dispose of food or drink daily; and
   vii. Promptly report any visible or suspected areas of mold growth to EHS.

6. Mold Assessment

Mold sampling is limited in usefulness due to mold's abundance in the natural environment. Additionally, there are no federal, state, or local limits for acceptable levels of mold or mold spores. Mold assessment procedures, including preliminary investigation guidelines and sampling protocols, can be found in a separate EHS document (*Mold Assessment Guideline).*

7. Mold Remediation

a. General Rules
   i. Porous material such as ceiling tiles, upholstered furniture, and gypsum board that are contaminated with mold may not be cleaned and shall be discarded immediately in a sealed plastic bag or wrapped in polyethylene sheeting for disposal.

ii. Non-porous materials, such as plastics or metals, or semi-porous materials, such as concrete and wood, can be cleaned and reused provided they are structurally sound. EPA registered cleaning agents should be chosen that contain an anti-fungal component.
iii. Safety Data Sheets for the biocides and other chemicals used for remediation should be submitted to EHS for approval prior to use.

b. Type 1 Mold Remediation: Mold growth either localized or distributed covering less than 20 square feet and excluding HVAC contamination
   i. EHS should be notified prior to engaging in Type 1 mold remediation.
   ii. Trained FMCS or custodial services personnel may perform the remediation.
   iii. The leak of water or moisture source shall be mitigated.
   iv. Room/area occupants should be notified of the presence of mold and be relocated by their respective departments prior to remediation. Notification should include a description of the remedial activities and a timetable for completion.
   v. A plastic drop cloth should be placed over non-contaminated items and surfaces. Complete containment of the work area is not necessary, but misting of areas to be remediated should be completed to suppress dust and release of mold spores into the air.
   vi. Items visibly contaminated with mold that cannot be cleaned or are not structurally sound due to water damage, including materials that could not be dried properly within 48 hours, shall be designated for disposal by the owner and removed. A pin-type moisture meter may be used to identify materials that are still moist. Items removed may be disposed of in the regular trash.
   vii. Upon completion of remediation, all surfaces in the vicinity of the affected area shall be high efficiency particulate air (HEPA) vacuumed, ensuring that the filter is properly placed in the vacuum. The vacuumed material shall be disposed of in plastic bags sealed with duct tape. In addition, non-porous surfaces and floors shall be cleaned with fungicidal cleaning agent.
   viii. EHS shall be notified upon completion of work and will provide approval for reoccupation of the room/area.

c. Type 2 Mold Remediation: Mold growth either localized or distributed covering greater than 20 square feet and/or including HVAC contamination
   i. Type 2 mold remediation may only be carried out by contractors approved by FMCS.
   ii. EHS shall be notified by FMCS of the project prior to its start.
   iii. The remediation contractor should fill out form *Mold Remediation Procedures* prior to commencing work. This form details methods and procedures that will be used

by the contractor to complete the mold remediation. It must be submitted to EHS at least two business days in advance of the project's start date.

iv. The leak of water or moisture source must be mitigated so that it will not reoccur.

v. Room/area occupants must be notified by their respective departments and/or FMCS of the presence of mold. Relocation during the remediation is the responsibility of the affected department(s).

1. Although procedures are the responsibility of the approved contractor, they are expected to follow approved methods of mold abatement at this level.
    a. At a minimum, gloves, eye protection, N-95 respirator or half-mask respirator, and disposable coveralls shall be worn.
    b. Area Supply and return a HVAC vents shall be blocked.
    c. A plastic drop cloth shall be placed over non-contaminated items and surfaces.
    d. Polyethylene sheeting that extends from ceiling to floor shall be installed around effected area with a slit entry and covering flap.
    e. Maintain area under negative pressure with HEPA filtered fan unit
    f. Contaminated items that cannot be cleaned or are not structurally sound must be placed in a sealed plastic bag or wrapped in polyethylene sheeting and can be disposed of in the regular trash.
    g. Upon completion of remediation, all surfaces in the vicinity of the area shall be HEPA vacuumed. In addition, non-porous surfaces and floors shall be cleaned and treated with fungicidal cleaning agent

vi. EHS shall be notified upon completion of work and will provide approval for reoccupation of the room/area.

8. Revisions

Date	Documented Changes	Initials
11/23/2020	Updated formatted and accessibility update.	MAS
10/14/2022	Reviewed – no updated necessary	AL
11/23/2023	Reviewed – no updated necessary	CG

For additional questions or concerns please contact EHS.

MOLD REMEDIATION PROCEDURES

(To be completed by licensed mold remediation contractor and submitted to EHS two business days prior to commencing work)

Area Description

Building Name: _____

Room Number(s): _____

Room(s) size in square feet: _____

Will adjacent areas be occupied during the abatement activity? ☐ **Yes** ☐ **No**

Remediation Contractor Information

Company Name: _____

Mold Remediation License Number: _____

City: _____ **State:** _____ **Zip:** _____

Contact Name: _____ **Phone:** _____ **Email:**_____

DATE OF REMEDIATION WORK: _____

DESCRIPTION OF MOLD REMEDIATION WORK

_____

_____

DESCRIPTION OF WORK PRACTICES AND ENGINEERING CONTROLS TO BE USED TO REMOVE MOLD AND TO PREVENT RELESE OF MOLD INTO ADJACENT AREAS

_____

_____

_____

_____

MOLD REMEDIATION PROCEDURES

(To be completed by licensed mold remediation contractor and submitted to EHS two business days prior to commencing work)

DESCRITION OF PERSONAL PROTECTIVE EQUIPMENT TO BE WORN BY MOLD REMEDIATION PERSONNEL

_____

_____

_____

DESCRPTION OF MOLD-CONTAMINATED WASTE DISPOSAL PROCEDURES

_____

_____

_____

DESCRPTION OF MOLD POST-REMEDIATION CLEANUP PROCEDURES

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ATTACH TO THIS FORM ANY OTHER RELEVANT INFORMATION (PLANS, DRAWINGS, PROPOSALS, ETC.) REGARDING THE REMEDIATION PROJECT.

FOR EHS USE

RECEIVED BY: _____

DATE: _____