

GUIDELINES FOR MOLD REMEDIATION (REMOVAL)

Indoor mold growth, water damage, or musty odors should be addressed quickly. Removing mold growth and correcting the underlying cause of water accumulation can help to reduce mold exposures and related health symptoms. *The source of water must be identified and corrected or mold growth will reoccur.*

Prompt remediation of mold-damaged materials should be the primary response to mold growth in buildings. The goal of remediation is to remove or clean mold-damaged materials using work practices that protect occupants and remediation workers. Prior to remediation, also consider the possible presence of other environmental hazards such as asbestos and lead. Trained building maintenance staff can address limited and occasional mold growth. For larger jobs, more extensively trained professional mold remediation workers may be needed.



Non-porous materials (metals, glass, hard plastics, etc.) can usually be cleaned. Semi-porous and porous structural materials, such as wood and concrete, can be cleaned if they are structurally sound. Porous materials, such as ceiling tiles and insulation, and wallboards (with more than a small area of mold growth) should be removed and discarded. Wallboard should be cleaned or removed at least six inches beyond wet or water-damaged areas or visible mold growth (including in hidden areas in wall cavities).

Disinfectants are usually not needed because physical removal of fungal growth is the most effective way to prevent exposure. Clean with a soap or detergent solution. Use the gentlest cleaning method that effectively removes the mold. All materials that will be kept should be dry and visibly free from mold. Consider additional wet cleaning of surfaces and materials adjacent to areas of mold growth to remove settled spores and fungal fragments. A High-Efficiency Particulate Air (HEPA) vacuum cleaner should also be used to clean these adjacent areas.

Small Isolated Areas (less than 10 square feet) – ceiling tiles, small areas on walls, etc.

- ✓ Remediation can be conducted by trained building maintenance staff. Training should include proper cleaning methods, personal protection, and potential health hazards associated with mold exposure. Training can be conducted as part of a program to comply with the requirements of the OSHA/PESH Hazard Communication Standard (29 CFR 1910.1200).
- ✓ Respiratory protection (N-95 disposable respirator) is recommended. The requirements of the OSHA/PESH Respiratory Protection Standard (29 CFR 1910.134) must be followed. Gloves and eye protection should also be worn.
- ✓ The work area should be unoccupied.
- ✓ Prior to remediation, difficult-to-clean surfaces such as carpeting that is not soaked or contaminated should be covered with plastic sheeting and sealed with tape. Difficult-to-clean equipment such as electronics should be removed.
- ✓ Use dust suppression methods, including cleaning or gently misting surfaces with a dilute soap or detergent solution prior to removal, High-Efficiency Particulate Air (HEPA) vacuum-shrouded tools, or use of a HEPA vacuum at the point of dust generation. Avoid work practices that create excessive dust.
- ✓ Moldy materials that can be cleaned should be cleaned using a soap or detergent solution. Materials that cannot be cleaned should be removed in sealed plastic bags. Plastic sheeting should be discarded after use. There are no special requirements for the disposal of moldy materials.
- ✓ The work area and areas used by workers for egress should be HEPA-vacuumed or cleaned with a damp cloth and/or mop and a soap or detergent solution.



Medium-Sized Isolated Areas (10 – 100 square feet)

- ✓ Remediation can be conducted by trained building maintenance staff. Training should include proper cleaning methods, personal protection, and potential health hazards associated with mold exposure. Training can be conducted as part of a program to comply with the requirements of the OSHA/PESH Hazard Communication Standard (29 CFR 1910.1200).
- ✓ Respiratory protection (N-95 disposable respirator or better) is recommended. The requirements of the OSHA/PESH Respiratory Protection Standard (29 CFR

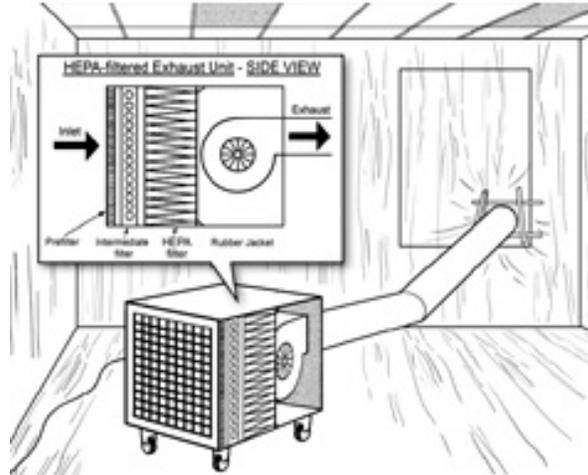
- ✓ 1910.134) must be followed. Gloves and eye protection should also be worn.
- ✓ The work area should be unoccupied.
- ✓ Cover the floor, egress pathways, and items left in the work area with plastic sheeting and seal with tape before remediation.
- ✓ Seal ventilation ducts/grills and other openings in the work area with plastic sheeting. The HVAC system may need to be shut down to properly seal vents.
- ✓ Use dust suppression methods, including cleaning or gently misting surfaces with a dilute soap or detergent solution prior to removal, the use of High-Efficiency Particulate Air (HEPA) vacuum-shrouded tools, or using a HEPA vacuum at the point of dust generation. Avoid work practices that create excessive dust.
- ✓ Moldy materials that can be cleaned should be cleaned using a soap or detergent solution. Materials that cannot be cleaned should be removed in a sealed plastic bag(s). Plastic sheeting should be discarded after use. There are no special requirements for the disposal of moldy materials.
- ✓ The work area and areas used by workers for egress should be HEPA-vacuumed and/or cleaned with a damp cloth and/or mop and a soap or detergent solution.

Large Areas (greater than 100 square feet) – for example, on multiple walls in a single room

- ✓ Oversight by an environmental health professional may be warranted.
- ✓ Properly trained and equipped professional mold remediation workers should conduct the remediation. Training should cover handling of mold-damaged materials, proper cleaning methods, personal protection, and potential health hazards associated with mold exposure. Training can be conducted as part of a program to comply with the requirements of the OSHA/PESH Hazard Communication Standard (29 CFR 1910.1200).
- ✓ Remediation workers should be equipped with:
 - A minimum of half-face elastomeric respirators with P-100 filters used in accordance with the OSHA/PESH Respiratory Protection Standard (29 CFR 1910.134)
 - Full body coveralls with head and foot coverings
 - Gloves and eye protection.
- ✓ The HVAC system serving the affected area should be shut down during remediation. The area should be isolated using plastic sheeting sealed with duct tape.



Furnishings should be removed from the area. Ventilation ducts and grills, other openings, and remaining fixtures or furnishings should be covered with plastic sheeting sealed with duct tape. Consider using an exhaust fan equipped with a HEPA filter to generate negative pressurization. Consider using airlocks and a clean changing room. Egress pathways should also be covered if a clean changing room is not used.



- ✓ The work area should be unoccupied.
- ✓ Use dust suppression methods, including cleaning or gently misting surfaces with a dilute soap or detergent solution prior to removal, High-Efficiency Particulate Air (HEPA) vacuum-shrouded tools, or a HEPA vacuum used at the point of dust generation. Avoid work practices that create excessive dust.
- ✓ Moldy materials that can be cleaned should be cleaned using a soap or detergent solution. Materials that cannot be cleaned should be removed in sealed plastic bags. The outside of the bags should be cleaned with a damp cloth and a soap or detergent solution or HEPA-vacuumed in the work area (or clean changing room) prior to their transport to unaffected areas of the building. There are no special requirements for the disposal of moldy materials.
- ✓ Before leaving the work area, workers should remove disposable clothing to prevent the tracking of mold-containing dusts outside of the work area.
- ✓ The work area and egress pathways (and clean changing room if present) should be HEPA-vacuumed and cleaned with a damp cloth and/or mop with a soap or detergent solution and be visibly clean prior to the removal of isolation barriers. Plastic sheeting should be discarded after use.



Mold in HVAC Systems

Mold growth in heating, ventilation, and air-conditioning (HVAC) systems can cause building-wide problems. Professional assistance may be needed even with small amounts of mold growth or moisture problems in an HVAC system. Recurring problems, regardless of size, may indicate a systemic problem and appropriate professional help should be sought.

Small Isolated Area (less than 10 square feet) of Mold Growth in HVAC System – for example box filter, small area on insulation

- ✓ Remediation can be conducted by trained building maintenance staff who are familiar with the design and function of the HVAC system. Training should cover proper cleaning methods, personal protection, and potential health hazards. Training can be conducted as part of a program to comply with the requirements of the OSHA/PESH Hazard Communication Standard (29 CFR 1910.1200).
- ✓ Respiratory protection (N-95 disposable respirator) is recommended. The requirements of the OSHA/PESH Respiratory Protection Standard (29 CFR 1910.134) must be followed. Gloves and eye protection should also be worn.
- ✓ The HVAC system should be shut down.
- ✓ Use dust suppression methods, including cleaning or gently misting surfaces with a dilute soap or detergent solution prior to removal, High-Efficiency Particulate Air (HEPA) vacuum-shrouded tools, or a HEPA vacuum used at the point of dust generation. Avoid work practices that create excessive dust.
- ✓ The use of plastic sheeting to isolate other sections of the system should be considered.
- ✓ Non-porous moldy materials that can be cleaned should be cleaned using a soap or detergent solution. Growth-supporting materials that are moldy, such as the insulation of interior-lined ducts, flexible ducts, and filters, should be removed and sealed in plastic bags. There are no special requirements for the disposal of moldy materials.
- ✓ The work area and areas used for egress should be HEPA-vacuumed and cleaned with a damp cloth and/or mop and a soap or detergent solution. Any plastic sheeting should be discarded after use.



Large Area of Mold Growth in the HVAC System (>10 square feet)

- ✓ Properly trained and equipped professional mold remediation workers with specific training and experience in HVAC systems should conduct the remediation.
- ✓ The presence of an environmental health professional with experience and specific knowledge of HVAC systems may be warranted.
- ✓ Remediation workers should be equipped with:
 - A minimum of half-face elastomeric respirators with P-100 filters used in accordance with the OSHA/PESH Respiratory Protection Standard (29 CFR 1910.134)
 - Full body coveralls with head and foot coverings
 - Gloves and eye protection.

- ✓ The HVAC system should be shut down prior to any remedial activities.
- ✓ The work area should be isolated from other areas of the HVAC system using plastic sheeting sealed with duct tape. The use of an exhaust fan equipped with a HEPA filter to generate negative pressurization should be considered. Consider using airlocks and a clean changing room. Egress pathways should also be covered if a clean changing room is not used.
- ✓ Use dust suppression methods, including cleaning or gently misting surfaces with a dilute soap or detergent solution prior to removal, High-Efficiency Particulate Air (HEPA) vacuum-shrouded tools, or a HEPA vacuum used at the point of dust generation. Avoid work practices that create excessive dust.
- ✓ Moldy materials that can be cleaned should be cleaned using a soap or detergent solution. Growth-supporting materials that are moldy, such as the insulation of interior-lined ducts, flexible ducts, and filters, should be removed in sealed plastic bags. The outside of the bags should be cleaned with a damp cloth and a soap or detergent solution or HEPA-vacuumed prior to their removal from the isolated work area. There are no special requirements for the disposal of moldy materials.
- ✓ Before leaving work areas, workers should remove disposable clothing to prevent the tracking of mold-containing dust outside of the work area.
- ✓ The work area and egress pathways (and clean changing room if present) should be HEPA-vacuumed and cleaned with a damp cloth and/or mop and a soap or detergent solution prior to the removal of isolation barriers. Plastic sheeting should be discarded after use.

adapted from
NYC Department of Health and Mental Hygiene
Guidelines on Assessment and Remediation of Fungi in Indoor Environments

