Safety & Risk Management Policies and Procedures

Title: Microbial Contamination "Mold" Prevention and Response Policy
Date: August 2013, rev 2019, 2024

Rationale: Indoor contaminants, such as mold spores are always present in both indoor and outdoor environments. Mold (fungal growth) is an allergen for certain portions of the population (about 10% of our population). In certain cases where mold growth is uncontrolled and not promptly remediated, this environment could present potential health risks to building occupants and cause physical damage to building components. Allergic type upper respiratory responses and adverse effects may occur in these conditions. Southwestern University created a policy and procedures for the identification, notification, assessment and remediation of mold contamination. A significant component of this policy is designed to prevent mold growth or building component contamination from spreading to a larger area by proactive maintenance and effective response to water leaks or vapor infiltration.

Goals: To establish a program to help prevent, control or mitigate mold related building problems.

Policy and Procedure: The Mold Policy covers the following:

- How to report and inspect mold contamination in campus spaces.
- Communication, training and team based approach to potential water/mold incidents.
- How to properly remediate, clean or restore mold contaminated surfaces.
- A maintenance plan to prevent the sources of mold contamination (water leaks, excessive humidity, condensation, adequate ventilation).

Mold Policy and Procedure

Reporting Water Intrusion or Mold Contamination of Building Materials

- Building occupants and Facilities Management staff should immediately report potential water damage/mold contamination to Facilities Management by issuing a work order request. Reporting all water intrusion, leaks, high humidity, condensation problems is essential to early intervention and control. The campus community as a whole can help by reporting these conditions immediately.

Inspection and Assessment

- Supervisor of Housekeeping, Supervisor of Maintenance or Mechanical Services will take the lead and coordinate services to ensure an assessment and appropriate remediation. Finding and fixing the water source problem(s) are essential and documenting these conditions in our work order system is important. Effective communication and coordination from Supervisors to other team members and the customer(s) impacted are essential to successfully manage a water intrusion/mold response. Use of a moisture meter by FM technicians is very useful to determine if

building materials are wet inside, the scope and area of impacted building materials and thus determine the appropriate remediation method (drying or removal).

- A team based approach should be used to visually inspect the area and determine the cause (source of water/moisture). Lead Supervisor should conduct on-site inspection depending on source and scope (small vs large). The assessment should consist of a visual inspection to determine the likely presence of mold or suspected presence of mold, the scope of building materials involved, and most importantly, determine the most likely water source that caused the mold growth. High quality photographs should be taken and uploaded to the work order. Results and scope should be documented in the work order. Under typical conditions, mold testing and a more formal indoor air quality evaluation by trained professionals is not deemed necessary [AIHA, EPA, OSHA]. ******Suspect mold contamination should be promptly cleaned from surfaces using acceptable mold cleanup protocols or the contaminated building materials removed to avoid spread of mold contamination on additional building material and to reduce occupant health exposures to airborne mold spores.
- Control of the water/moisture source is the primary concern and should be addressed immediately by the appropriate Facilities Management Manager/Supervisor. FM technicians should routinely use their moisture meter to determine if building materials are wet, damp, impacted and thus determine the appropriate remediation method (drying with fans, dehumidifiers or prompt removal of water damaged material).
- The Lead Supervisor or Facilities Management Manager will contact the Director of Campus Safety and Risk Management for consultation if the scope approaches or exceeds 25 contiguous square feet or if there are specific occupant health related concerns. Director of S&RM will determine if the project is best outsourced to a mold consultant and remediation firm as a (TDLR) mold regulated project.
- A more comprehensive mold assessment (bulk, surface or air) may be conducted when site specific conditions and health concerns warrant the additional resources - performing in-house sampling with our Industrial Hygienist or hiring an environmental consulting firm. Air sampling to facilitate an indoor air quality exposure assessment is limited to specific conditions that may warrant engaging specially trained professionals and the resources it takes to conduct this type of environmental assessment. Visual site inspection, interview history with occupants and FM staff and assessments leading to a remediation plan can be often conducted without environmental sampling.

Water Intrusion - water damaged building materials

- Immediately report water leaks to Facilities Management by issuing a work order.
- Facilities Management staff or external water mitigation vendor will quickly remove standing water and simultaneously assess water damaged materials (moisture meter) when they respond to a water leak/flood work order. Action must be taken within 24 to 48 hours to dry all affected materials in order to prevent mold contamination and spread of mold or bioaerosols. This usually involves the use of water extractors, dehumidifiers and fans and may include the larger HEPA filtered air scrubbers (located in the 4th floor FJS mechanical room).

Surface Cleaning for Materials with Potential for Mold Growth

- A site specific mold remediation plan to properly clean-up, remove, or replace mold or suspected mold contaminated materials should be completed when warranted. The plan should be posted on site throughout the remediation project by the supervisor in charge. Staff involved in the remediation plan need to be informed and follow the specific details of the mold remediation plan.
- Trained housekeeping staff may be used to clean and decontaminate materials and/or surfaces that do not involve material demolition (removal of wet/damaged sheetrock or ceiling tiles) for non-regulated projects (< 25 contiguous square feet – per TDLR Rule).
- Trained Facilities Management staff may be used for removal of water damaged materials (demolition) for non-regulated projects (< 25 contiguous square feet – per TDLR Rule) or to clean areas requiring the use of ladders.

Southwestern University's Multidisciplinary Mold Team

1. Supervisors of Maintenance, Mechanical Services and Housekeeping
2. Manager of Facilities Maintenance Services
3. Director of Campus Safety & Risk Management
4. AVP for Facilities Management
5. Third party water remediation or mold remediation contractors & consultants

Regulations

Mold assessment and remediation activities are regulated by the Texas Department of Health.

- A mold assessment (scope over 25 contiguous square feet) should be conducted by a licensed mold assessment consultant.
- Mold remediation (scope over 25 contiguous square feet) should be conducted by a licensed mold remediation contractor.

Contact the Director of Campus Safety & Risk Management for assessment, evaluation and coordination of a licensed mold contractor and consultant. Facilities Management Manager or Supervisor will provide logistical services and communications with campus customer (department) and arrange access.

Mold Contaminated Material Guide

Non-porous surfaces: desks, furniture, doors/frames, window sills/frames, metal air vents, etc

- These items can usually be effectively cleaned/decontaminated.

Semi-porous or porous items: carpets, fabric covered furniture, books, wood, etc.

- These items may be able to be cleaned/decontaminated satisfactorily, but may require special handling.

Building materials: sheetrock walls/ceilings, ceiling tiles, fiberglass insulation.

- These items sometimes cannot be properly cleaned/decontaminated (unless they are coated, painted, sealed) and should generally be removed and replaced.

General Mold Cleaning Process

Safety and Personal Protective Equipment

- Wear safety glasses (goggles are preferred), latex or nitrile gloves, and N95 mask - 3M Model# 8210.

Cleaning Process:

- First, clean all visible dust and visible mold debris with slightly damp disposable cloth using disinfectant cleaner (Sporicidin or EPA biocide) or use a HEPA vacuum pulling in one direction towards you. **Do not re-contaminate objects with a dirty cloth.** Use steri-wipe method – after a few wipes fold cloth in half. In some cases where mold is thick or very dry, use special HEPA vacuum with attachment brush tool first, before wet cleaning to carefully and thoroughly clean dry mold contaminated surfaces (slowly pull vacuum brush over contaminated surfaces in one direction towards you).
- Second, disinfect all potentially contaminated surfaces with a clean disposable cloth damp with disinfectant/biocide and allow disinfectant to sit on surfaces for 10 minutes. Change rags frequently! You can also spray mist directly on the surface, wait 10 minutes then use a slightly damp cloth to wipe surface clean and dry.
- After 10 minutes, dry surfaces with a clean dry cloth or set up fans to dry surfaces.
- For some clean-up projects (> 15 – 25 sq. ft) it is best to set up a HEPA filtered air scrubber in the area to prevent mold migration prior to and during the clean-up process (two air scrubbers are stored in FJS 4th floor mechanical room).

In-House Mold Remediation Protocol: Ceiling Tiles & Sheetrock

For clean-up or removal of mold contaminated building materials that are much less than 25 contiguous square feet and can be effectively performed with in-house trained staff without substantial risk of spreading mold spores/contamination to other material or areas. These projects technically do not fall under the Texas TDLR mold assessment and remediation rules and do not require a licensed mold assessment consultant or a licensed mold remediation contractor to perform the work. Facilities Management must use prudent decision-making during the assessment to determine if the remediation project is better suited for a mold remediation contractor (consult with Safety & Risk Management).

Protocol

1. Identify the suspect water damaged materials and areas and look for signs of visible mold growth.
2. Identify the source of the water or moisture and take corrective action measures to eliminate the water sources (cause of mold).
3. Prepare a mold remediation work plan that meets the specific site conditions.
4. Supervisor is responsible to communicate site specific work plan to maintenance team or custodial team to prepare for clean-up or removal.

5. Ensure use of personal protective equipment to protect the health of employees engaged in the work. Recommend: N95 respirator or ½ face silicone respirator with hepa cartridges, safety glasses or goggles and latex/nitrile gloves.
6. For ***water/mold damaged sheetrock removal***:
    a. Generally, start with hepa vacuuming with brush attachment in one direction only, slowly pull brush across mold contaminated surfaces with hazardous material vacuum. Gently sweep in one direction to capture mold spores and reduce the spread of mold spores.
    b. Apply a thin layer of adhesive film plastic wrap around all mold contaminated areas to seal in the mold spores prior to cutting sheetrock. Tape edges to "clean edges" of sheetrock at least 6" beyond mold area to secure in place to encapsulate the mold spores before cutting or removing.
    c. Cut sheetrock at least one foot above and around the mold stained areas - find clean sheetrock to cut. Gently remove and immediately bag mold damaged sheetrock or other materials. Seal bag with duct tape - dispose in trash dumpsters. Leave hepa vacuum running to help capture dust.
    d. Hepa vacuum with brush attachment - all surrounding areas, floor to remove dust, debris and any mold spores released.
    e. Perform a wet wipe - clean with sanitizer cleaner on all affected surfaces to be sure mold and dust/debris is cleaned.
    f. Perform a wet clean of hepa vac and other tools and equipment used. Seal open ends of hepa vacuum to prevent mold/dust from exiting the hose/vacuum.
    g. Dispose of disposable type PPE in garbage bag and seal. If using a ½ face silicone respirator - wipe clean per manufacturer's instructions.
    h. Wash hands/face.
7. For **water/mold contaminated ceiling tiles removal**:
    a. Generally, start with hepa vacuuming with brush attachment in one direction only, slowly pull brush across mold contaminated surfaces with hazardous material vacuum. Gently sweep in one direction to capture mold spores and reduce the spread of mold spores.
    b. Apply a thin layer of adhesive film plastic wrap around all obvious mold contaminated areas to seal in the mold spores prior to removing ceiling tile from track.
    c. Gently remove ceiling tile and immediately bag. This is best conducted as a two person process. Seal bag with duct tape - dispose in trash dumpsters.
    d. Hepa vacuum with brush attachment - all surrounding areas/floor to remove dust, debris.
    e. Perform a wet wipe - clean with sanitizer cleaner on all potentially affected surfaces to be sure mold and dust/debris is cleaned.
    f. Perform a wet clean of hepa vac and other tools and equipment used. Seal open ends of hepa vacuum to prevent mold/dust from exiting the hose/vacuum.
    g. Dispose of disposable type PPE in garbage bag and seal. If using a ½ face silicone respirator - wipe clean per manufacturer's instructions.
    h. Wash hands/face.

Maintenance Program

- Good preventive maintenance and housekeeping practices are at the core of our Mold management Plan and will help to maintain good indoor air quality in buildings. There are 3 basic steps:
  1. Routine inspections – Routine surveillance within Housekeeping Dept. or other maintenance staff along with a rapid response to water intrusion problems and/or signs of mold growth. All housekeeping and maintenance staff should be surveying for water intrusion, high humidity environments and mold growth as part of their routine cleaning tasks. Report all water intrusion and mold conditions through the work order system.
  2. Implement preventative maintenance program on HVAC and associated materials that can be adversely affected. Keeping RH% at or below 60% will help to reduce the likelihood of mold growth due to high humidity levels. Maintain adequate outside air intake and maintain temperature ranges within acceptable levels (avoid very warm or very cold conditions). Periodic inspection and cleaning of HVAC grills is important. When grills appear to have dust/dirt and suspect mold growth – it is highly recommended to issue a work order for grills to be properly cleaned using the mold cleaning protocol. It is usually not necessary to sample for lab analysis – it is best to clean the grill surface and remove visible signs of suspect mold.
  3. Managed housekeeping program with an emphasis on water reduction cleaning techniques & proper drying (fans & de-humidifiers).

- A HVAC routine preventative maintenance program should be developed and implemented to reduce or eliminate water leaks (many caused by condensation).
  - Periodically clean coils, drain pans, drain lines
  - HVAC mixing boxes (visually inspect and clean on periodic basis)
  - Supply and return diffuser grills should be kept clean – free of excess dust/dirt and suspect mold growth
  - Routinely change air filters
  - Maintain well sealed pipe or duct insulation (prevent condensation and mold contamination and material damage).
  - PM services should be based on building specific needs and be documented when completed in work order system.

- **Mold Remediation Vendor List**:
  1. SteamTeam, ServPro, XXL Construction
- **Consultants**
  - Baer Environmental - Eija Shanks. eshanks@baereng.com
  - Dale White : dalew.mitmold@gmail.com
  - Lauderdale Environmental – Dave Williams - davewilliams.lee@yahoo.com
  - 512-557-5613

Microbial Health Information:
There are over 100,000 types of molds, some of the most common molds found in damp, wet or moist indoor locations are: alternaria, aspergillus, penicillium, cladosporium, chaetomium, fusarium and acremonium. Stachbotrys is often found in very wet or flooded building components. Exposure to airborne mold spores can cause immediate-type allergic reactions for individuals with mold allergies. Exposure to aspergillus can be particularly problematic for people with chronic lung diseases and can cause lung tissue inflammation and significant asthmatic responses.

What are mold exposure and potential allergic response symptoms?

- Nasal, upper respiratory and sinus mucous membrane irritation and symptoms (sinusitis & hayfever) – runny nose, nasal congestion, inflammation, coughing, throat irritation and sneezing.
- Sore throat, watery or burning eyes, dry cough, shortness of breath (asthma), irritation of nasal passages, or skin reactions/rashes. Headaches, memory loss, poor concentration, chronic fatigue and nose bleeds may also be related to exposure to mold spores and mixed microparticles or mycotoxins produced from certain mold types.

What about mold and asthma?

Exposure to multiple different types of mold spores may be much more harmful to people with asthma even if they do not have specific mold allergies. The small size of mold spores allows them to pass easily into the lower airways, where they can trigger an asthma attack and cause problematic systemic lung inflammation. Mold spores may also interact with other allergens and environmental air pollution, thus increasing the asthma risk from those combination of microparticles and substances.

In addition to individuals with mold allergies, people also can have an irritant or adverse health response to some of the volatile chemicals (mycotoxins) [stachybotrys and aspergillus are a few] that certain molds release into the air as they grow and mature.