FORT GEORGE G. MEADE

STANDARD OPERATING PROCEDURES
FOR
MOLD IDENTIFICATION AND REMEDIATION

May 2023

Table of Contents

1. Purpose:

The purpose of this memorandum is to document mold information dissemination, detection, and abatement in the Fort Meade area of operations in accordance with IMCOM OPORD 23-007. It is the intent of the Directorate of Public Works (DPW) that the Community work together to proactively eliminate threats to life, health, and safety from mold and improve the quality of life for people in Army Facilities. Team Meade's early detection and elimination of mold will reduce unscheduled repairs and increase the service life of our Installation's facilities.

2. Scope and Schedule:

The scope of work will include mold identification, assessment, remediation, and quality assurance. Once reaching full operational capability (FOC) the mold mitigation team (MMT) will respond to mold work orders within 24 hours and complete mitigation within 7 days. Reaching FOC will require service contract modifications, assignment of additional members to the mold mitigation team, and training. The Garrison's target for FOC is October 2023. Initial Operation Capability will be immediate upon SOP approval.

3. Definitions and Terms (Ref: IMCOM OPORD 23-007):

a. Mold is a naturally occurring microscopic fungi that can grow on indoor and outdoor surfaces. Mold can live in all environments, climates, and seasons but requires oxygen, moisture, and a nutrient source to grow. The types of molds and their abundance in an area depend on the availability of nutrients like dirt, water, and temperature. Molds grow well on cardboard, ceiling tiles, paper, and wood products.
b. Mildew is a general term used to refer to certain kinds of mold or fungus that typically grow in a flat growth pattern and found on shower walls, windowsills, and other places with high moisture levels.
c. Black/Toxic Mold is a generic term used to refer to toxigenic molds, or molds that produce mycotoxins. This term typically refers to the species stachybotrys chartarum, which can be identified in water damaged buildings.
d. Typical conditions that lead to mold growth in buildings are chronic water intrusion, lack of adequate ventilation and moisture control, or isolated floods caused by the weather or a water pipe bursting.
e. The color of mold is not an indication of how dangerous it may be. All visible molds should be removed from living areas. When mold growth is present, the inspection, removal and cleaning of contaminated materials must be handled with proper precautions. Air sampling for mold should never be part of a routine assessment, due to it not being a good indicator of the presence or absence of mold in a building. Remediation strategies generally can be made based on a visual inspection, or surface sample. Air sampling methods for some molds are prone to false negative results and therefore cannot be used to definitively rule out contamination.

f. Mold can grow almost anywhere; learning to identify, report and remediate it correctly is everyone's business.

4. Roles/Responsibilities:

4.1 Rapid Assessment Team:

a. Within 24 hours of receipt of a work order, evaluate areas suspected to be contaminated by mold growth. Provide recommendations to the DPW for remediation for areas greater than10 square feet.
b. Assist DPW Operations and Maintenance or Engineering Division in identifying the underlying causes of water intrusion and mold growth. Develop the appropriate repair strategy to prevent recurrence.
c. 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 to determine if work shall be considered DMO, 4283 project or personal cleaning requirement.
d. Conduct annual property condition/preventative maintenance inspections in Army-maintained housing facilities using existing QA checklist and upload documents in eMH.
e. Educate and inform customer on mold prevention and remediation using provided pamphlet as approved by the DPW.

4.2 Remediation Team:

a. Designate a remediation team leader for each response to provide consistent communication regarding status.
b. Identify and submit work orders to fix the source(s) of water leak(s) or intrusion.
c. Arrange and manage services for water removal and restorative drying of affected structure in accordance with Appendix 7.
d. Record and document all activities and services performed in response to the problem. For water restoration, records would include complete moisture readings.
e. Complete the project in a manner which complies with all federal, state, and local government regulations and procedures.
f. Ensure service technicians complete the IMCOM Dampness and Mold Visual Assessment (VSA) worksheet as identified in Annex B of IMCOM OPORD 23-007 when required. When completed the VSA worksheet will be converted to Adobe PDF file format and uploaded to the corresponding Army Maintenance Application (ArMA) work request ticket submitted by the customer as supporting documentation for work completed.[1]
g. Appointed staff will ensure service technicians complete the IMCOM Post Remediation Verification (PRMV) worksheet as identified in Appendix 1 of IMCOM

[1] FOC reached after inclusion of VSA worksheet via pending BASOPS contract modification. Estimated completion date December 2023.

OPORD 23-007 when required. When completed, the PRMV will be converted to Adobe PDF file format and uploaded to the corresponding ArMA work request ticket submitted by the customer as supporting documentation for work completed.[2]

4.3 Quality Assurance Team:

a. Appointed staff will validate completion of the remediation work by completing the PRMV worksheet as identified in Appendix 1 of IMCOM OPORD 23-007, when required. When completed the PRMV will be converted to Adobe PDF file format and uploaded to the corresponding ArMA work request ticket submitted by the customer as supporting documentation for work completed.[3]
b. Appointed staff will assess conditions for occupancy after water restoration or mold remediation activities have been completed.

4.4. Unit Leadership:

a. Shall ensure that all main facility managers, as members of the MMT, are properly trained and on garrison appointment orders allowing them to perform duties of the garrison command representative in completion of Annex B of IMCOM OPORD 23-007 when required.
b. Shall provide 24-hour review of completed work and evaluate for proper completion using Annex B of IMCOM OPORD 23-007, when required.

4.5. Garrison Directorate of Public Works:

a. Responsible for creating and updating the Counter-Mold SOP and facilitating the Counter-Mold campaign in accordance with IMCOM OPORD 23-007.
b. Maintain a running list of mold mitigation team members and their responsibilities.
c. Distribute training to mold mitigation team members.
d. Provide Contracting Officer Representative oversight to the BASOPS Contractor and report noncompliance to the Contracting Officer.

5. Mold Prevention (Ref: TG277):

a. Solve moisture problems before they become mold problems! The key to mold control is moisture control. The following steps are expected in all on-post spaces:
   1) Fix leaking pipes and leaks in the building envelope as soon as possible.
   2) Watch for condensation and wet spots. Clean and dry wet or damp materials within 48 hours.
   3) Fix source(s) of moisture problem(s) as soon as possible.
b. Prevent moisture due to condensation by increasing surface temperature or reducing the moisture level in air (humidity). To increase surface temperature,

[2] See footnote 1.
[3] See footnote 1.

insulate or increase air circulation. To reduce the moisture level in air, repair leaks, increase ventilation (if outside air is cold and dry), or dehumidify (if outdoor air is warm and humid). Whenever possible, ventilate areas with high humidity (showers and dishwashing areas) to the outside. Condensation occurs when warm air collides with cold surfaces, or when there is too much humidity in the building.

1) Keep heating, ventilating, and air-conditioning (HVAC) drip pans clean, flowing properly, and unobstructed.
2) Vent moisture-generating appliances, such as dryers, to the outside.
3) Maintain relative humidity below 60%, ideally 30-50%, if possible.
4) Maintain a positive pressure on the building envelope.
5) Perform regular building HVAC inspections and maintenance as scheduled.
6) Do not let foundations stay wet. Provide adequate drainage and slope the ground away from the foundation.
7) Clean and repair gutters regularly.
8) Allow for adequate natural ventilation in crawlspaces under structures. Inspect crawl spaces for stagnant water.

6. Mold Remediation Procedures:

a. All work shall be completed in accordance with IMCOM OPORD 23-007, Annexes C and D, USAPHC TG 277 and TG 278. Submit all work beyond housekeeping in ArMA. The Fort Meade Assessment Team will determine level of remediation. *See* appendix A for the full Technical Guides.

b. Building occupants are responsible for general housekeeping and above common level support cleaning. Wiping down accumulated dust on non-porous surfaces such as HVAC vents and covers is not a remediation activity. Procurement of proper cleaning supplies and PPE is the building occupant's responsibility. Below are examples of general housekeeping responsibilities:

Figure 1: Bathtub Mildew

Figure 2: Dusty Bathroom Return Vent

Figure 3: Dusty HVAC Return Vent

c. There are four levels of mold remediation as described below. The size of the area impacted by mold contamination primarily determines the type of remediation. The sizing levels below are based on professional judgment and practicality; currently there is not adequate data to relate the extent of contamination to frequency or severity of health effects. The goal of remediation is to remove or clean contaminated materials in a way that prevents the emission of mold and dust contaminated with mold from leaving a work area and entering an occupied or non-abatement area, while protecting the health of workers performing the abatement and building occupants. The listed remediation methods were designed to achieve this goal, however, due to the general nature of these methods it is the responsibility of the individuals conducting remediation to ensure the methods enacted are adequate. For example, the use of a full-containment may be prudent for removal of less than 10 square feet of visibly moldy building materials in an occupied office environment.

d. Non-porous (e.g., metals, glass, and hard plastics) and semi-porous (e.g., wood, and concrete) materials that are structurally sound and are visibly moldy can be cleaned and reused. Cleaning should be done using a detergent solution. Porous

materials such as ceiling tiles and insulation, and wallboards with more than a small area of contamination should be removed and discarded. Porous materials (e.g., wallboard and fabrics) that can be cleaned, can be reused, but should be discarded if possible. All materials to be reused should be dry and visibly free from mold. Routine inspections should be conducted to confirm the effectiveness of remediation work.

e. The use of bleach or other biocides is questionable in most cases. The effectiveness of bleach in reducing living mold is dependent on concentration, residual chlorine levels, and contact time on the surface. All of these factors are difficult to control during remediation. Removal of all mold growth can generally be accomplished by physical removal of materials supporting active growth and thorough cleaning of non-porous materials. In addition, a biocide will break the cell wall of the mold spore; however, the cell wall fragments are still allergens so the physical removal (e.g., soap and water) of the mold is still necessary. Therefore, application of a biocide serves no purpose that could not be accomplished with a detergent or cleaning agent.[4]

f. Remediation levels include:
Level I: Small Isolated Areas – Total surface area affected less than 10 square feet - e.g., ceiling tiles, small areas on walls. *See* page 4 of TG 277.

Level II: Medium – Total Surface Area affected between 10 and 100 square feet - e.g., several wallboard panels. To be conducted by certified mold remediation specialists.

Level III: Large Area – Total Surface Area affected greater than 100 square feet or potential for increased occupant or remediator exposure during remediation is estimated to be significant. *See* Appendix C for detailed guidance.

Level IV: Remediation of HVAC Systems (*See* Appendix C for detailed guidance). For a small area (less than 10 square feet) follow Level I guidance for PPE and containment and for areas (greater than 10 square feet) follow Medium (Level II) or when greater than 100 square feet follow Large (Level III) guidance for PPE and containment as discussed in Appendices C, D, and E.

7. Personal Protective Equipment (From TG 277):

a. Skin and Eye Protection

Gloves are required to protect the skin from contact with mold allergens (and in some cases mold toxins) and from potentially irritating cleaning solutions. Long gloves that

[4] TG 277, page 3.

extend to the middle of the forearm are recommended. The glove material should be selected based on the type of materials being handled. If you are using a strong cleaning solution, you should select gloves made from natural rubber, neoprene, nitrile, polyurethane, or polyvinyl chloride. If you are using a mild detergent or plain water, ordinary household rubber gloves may be used. To protect your eyes, use properly fitted goggles or a full-face respirator with a HEPA filter. Goggles must be designed to prevent the entry of dust and small particles. Safety glasses or goggles with open vent holes are not acceptable.

b. Respiratory Protection

Respirators protect cleanup workers from inhaling airborne mold, mold spores, and dust. Respiratory protection used in accordance with the OSHA respiratory protection standard (29 CFR 1910.134), is recommended. All individuals must be trained, have medical clearance, and must be fit-tested by a trained professional before wearing a respirator. (Note: this may not apply to contractors under Voluntary Use Respirators).

1) Minimum: When cleaning up a small area affected by mold, you should use an N-95 respirator. This device covers the nose and mouth, will filter out 95% of the particulates that pass through the filter. In situations where a full-face respirator is in use, additional eye protection is not required.
2) Limited: Limited PPE includes use of a half-face or full-face air-purifying respirator (APR) equipped with a HEPA filter cartridge. These respirators filter mold particles in the air. Note that half-face APRs do not provide eye protection. In addition, the HEPA filters do not remove vapors or gases. You should always use respirators approved by the National Institute for Occupational Safety and Health.
3) Full: In situations in which high levels of airborne dust or mold spores are likely or when intense or long-term exposures are expected (e.g., the cleanup of large areas of contamination), a full-face, powered air-purifying respirator (PAPR) is recommended. Full-face PAPRs use a blower to force air through a HEPA filter.
4) The HEPA-filtered air is supplied to a mask that covers the entire face or a hood that covers the entire head. The positive pressure within the mask or hood prevents unfiltered air from entering through penetrations or gaps. Individuals must be trained to use their respirators before they begin remediation.

8. Training:

a. Mold mitigation team members will have access to IMCOM sponsored training. In addition, staff identified as key members of the MRT will receive a 3-day Mold Inspection and Assessment Course which is the same training required for state licensed contractors. Any alternatives to these trainings will be approved, in writing, by the Garrison Commander.

b. Garrison will conduct IMCOM mold education briefings in stakeholder meetings, initial resident communications, town halls, newcomer briefs, and/or onboarding process.

9. Assessments and Verification:

a. Garrison Staff and selected Facility managers will be put on appointment Orders as part of the Fort Meade MRT.
b. Technicians will be expected to perform an initial visual mold assessment to determine the correct level of work as mentioned above.
c. The MRT member that completes the remediation and an appointed staff member that is chosen to represent the Garrison Commander will complete the PRMV Worksheet as listed in Annex B of IMCOM OPORD 23-007.

10. Privatized Housing:

a. Garrisons housing staff will provide their privatized housing partner a copy of the approved Garrison SOP and request they meet or exceed the local SOP.
b. Garrison Housing Managers will conduct an annual review of the SOP, partner standards and document it in an annual compliance report.
c. The Housing Partner is expected to allow the garrison appointed representative to complete the PRMV Worksheets.