FEMA RECOVERY DIVISION

FACT SHEET 9580.100

MOLD REMEDIATION

Overview

Extensive disaster-related damages may result in public facilities becoming inundated or exposed to wet and humid weather conditions for extended periods of time. The limited availability of repair and restoration contractors may delay clean-up activities. In addition, the disruption of electrical power can inhibit the use of water extraction, pumping and drying electric equipment. As such, the damaged structures and their contents may remain waterlogged until power is restored and remediation can begin. Such water saturation may cause growth and propagation of mold on structures and interior contents, causing health-related problems and increasing the cost of repairs. The following guidance is provided to assist Public Assistance staff and applicants (entities that meet the requirements of 44 CFR 206.222 – State, local governments, Indian tribes or authorized tribal organizations, and certain private non-profits) with the remediation and/or repair of their damaged facilities.

Determining Eligibility of Mold Remediation Costs

- The cost of mold sampling, both pre-and post-remediation, may be eligible for reimbursement, provided there is evidence prior to remediation to indicate the existence of disaster-related mold.
- The cost of mold sampling which reveals *no presence of disaster-related mold* is not eligible for reimbursement.
- Costs to perform eligible remediation - either through force account or a contractor - may be eligible for reimbursement. Contractor costs are subject to the contract procurement requirements in 44 CFR 13.36.
- The following remediation activities may be eligible under Category B:
    - Wet vacuuming, damp wiping or HEPA vacuuming of the interior space.
    - Removal of contaminated gypsum board, plaster (or similar wall finishes), carpet or floor finishes, and ceilings or permanent light fixtures.
    - Cleaning of contaminated heating and ventilation (including ductwork), plumbing, and air conditioning systems, or other mechanical equipment.

MOLD REMEDIATION

- If an applicant fails to take reasonable measures to prevent the spread of mold contamination to a facility, the rehabilitation and repair of the additional contaminated area will not be eligible for federal assistance.

- If an applicant can document and justify why reasonable measures were not taken to prevent further contamination to a facility from mold, or why reasonable measures taken were insufficient to prevent further damage, remediation activities may be eligible for reimbursement. Examples of extenuating circumstances may include:

    - Disruption of power.
    - Facility remained underwater.
    - Inability to access the facility due to the disaster, i.e. debris blocking access routes and facility.
    - Facility HVAC equipment damaged due to the disaster.
    - Insufficient resources to remediate the entire facility.

Identification

- Mold contamination or associated damages, identified by the applicant, must be a direct result of the disaster. Situations that are not obvious will require a closer examination, usually with the assistance of an Industrial Hygienist.

- It is the responsibility of the applicant to show evidence of mold contamination or damage during the inspection. Sampling may not be necessary; however, applicants may choose to conduct pre- or post- sampling by an experienced professional to ensure proper or adequate remediation.

- The applicant may provide an Industrial Hygienist's report to support its request for assistance.

Remediation

- The method of remediation will depend on the types of material that are damaged and the extent of damage. Accordingly, applicants may employ a variety of mold cleanup methods to remediate mold damage, as appropriate to the characteristics of the situation.

- The following charts provide guidance on sizing the scope of the remediation effort and mold remediation methods and their application. This information is not all encompassing, but is provided as a general reference for an applicants' consideration when developing a scope of work for force account or a request for bid/proposal.

MOLD REMEDIATION

Sizing the Scope of Work

The extent of contamination will dictate the containment and personal protection equipment used by the Applicant or contractor during remediation work. The following parameters may be used as a general guideline.

*Size designation	*Personal Protective Equipment	*Containment	Remediator
Small (<10 sf)	Minimum RN-95 respirator Gloves Goggles	None required	Force Account
Medium (10 – 100 sf)	Limited or Full OSHA requirements	Limited, containment of the contaminated area using sheeting	Force Account or Remediation Contractor depending on contaminated materials
Large (>100 sf)	Full OSHA requirements	Full containment	Remediation Contractor

** Summarized from Indoor Environments Division (IED) of the U.S. Environmental Protection Agency, "Mold Remediation in Schools and Commercial Buildings"; http://www.epa.gov/mold/table2.html*

Mold Remediation Methods

Method	Application
Wet Vacuum	▪ Use when materials are wet ▪ Use where water has accumulated, such as on floors, carpets and hard surfaces ▪ Do not use when sufficient liquid is not present
Damp Wipe	▪ Wipe or scrub non-porous (hard) surfaces with water and detergent ▪ Follow instructions listed on the product label
High Efficiency Particulate (HEPA) Vacuum	▪ Final clean-up after thoroughly dry, and contaminated materials are removed ▪ Recommended for cleanup of dust outside of the remediation area ▪ Properly seal HEPA filter ▪ Personal protection equipment (PPE) is highly recommended; filter and contents must be disposed of in well-sealed bags
Discard	▪ Building materials and furnishings that cannot be remediated ▪ Seal contents in two bags using 6-mil polyethylene sheeting ▪ Large items may be covered in polyethylene sheeting and sealed with duct tape ▪ Sealing materials must be within containment area to limit further contamination

Summarized from Indoor Environments Division (IED) of the U.S. Environmental Protection Agency, "Mold Remediation in Schools and Commercial Buildings": http://www.epa.gov/mold/mold_remediation.html

MOLD REMEDIATION

Application of Remediation Methods

The following list outlines actions typically used to remediate mold. The methods are described above.

Water Damaged Material	Action
Books and paper	• Non-valuable items, discard • Valuable/Important, photocopy and discard originals • Invaluable items, freeze in frost free freezer, meat locker or freeze dry
Carpet and backing	• Wet vacuum • Reduce ambient humidity levels with dehumidifier • Accelerate drying process with fans
Ceiling tiles	• Discard and replace
Cellulose insulation	• Discard and replace
Concrete or cinder block surfaces	• Wet vacuum • Accelerate drying process with dehumidifiers, fans and/or heaters
Fiberglass insulation	• Discard and replace
Hard surfaces, porous floorings (linoleum, ceramic tile, vinyl)	• Vacuum or damp wipe with water and mild detergent • Scrubbing may be necessary • Allow to dry
Upholstered furniture	• Wet vacuum • Accelerate drying process with dehumidifiers, fans and/or heaters
Wallboard (drywall and gypsum board)	• If obvious swelling and seams are not intact – discard • If no obvious swelling and seams are intact, may be dried in place • Ventilate wall cavity
Window drapes	• Launder or clean according to manufacturer's instructions
Wood surfaces	• Remove water with wet vacuum • Accelerate drying process with dehumidifiers, fans and/or heaters • Treated or finished wood, damp wipe • Wet paneling, discard and ventilate wall cavity

Summarized from Indoor Environments Division (IED) of the U.S. Environmental Protection Agency, "Mold Remediation in Schools and Commercial Buildings"; http://www.epa.gov/mold/table1.html

Other item of note:

- Do not use fans before determining that the water is clean and sanitary. Consult an experienced professional if you and/or your remediators lack expertise in contaminated water situations.

John R. D'Araujo, Jr.
Director of Recovery