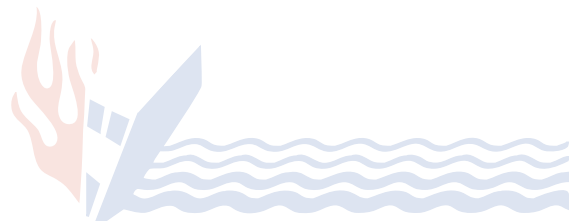


Jose Montemayor, Insurance Commissioner of the Texas Department of Insurance, stated in September 2001, "Mold has become a tremendous emotional issue for many consumers and insurance companies, but it's important that we deal with it calmly, responsibly, and rationally. Insurance companies must respond quickly when policyholders report water losses because delay invites the growth of mold, increase the cost of a claim and is poor customer service. Homeowners should immediately stop leaks at their source, dry out the areas and dehumidify their homes to minimize the possibility that mold will accompany a water loss."

When water damage is detected early and a professional restoration contractor provides the mitigation procedures quickly, the conditions for mold growth can be eliminated. To effectively eliminate mold contamination call your local **AFTERDISASTER®** Business Center to mitigate the damage and completely dry down the building with state-of-the-art equipment and procedures. We will provide your insured with rapid response, a large-scale capability, thorough inspection and evaluation service and a cost-effective solution.



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“Mold & Mildew Everywhere – What’s the Fuss?”

By John Capponi, Certified Restorer, Certified Mold Remediator



Visible mold colonization on drywall

Toxic mold claims have become one of the hottest issues facing the insurance industry under both personal and commercial line policies. Dr. Robert P. Hartwig, Vice President of the Insurance Information Institute, a trade association, said, "Insurers across the country are dealing with tens of thousands of claims regarding mold. Many insurers have reported that through mid-2001 they have already exceeded the number of claims they saw all of last year." He attributed the explosion in claims to increased media attention in recent years. Most commonly filed homeowners' damage claims are linked to water and water is necessary for mold to grow.

Molds are a subset of fungi, simple microscopic organisms found virtually everywhere indoors and

outdoors. There is no technical difference between mold and mildew and these terms are used interchangeably. Molds are the most typical form of fungus found on earth and are essential components of our planet's ecosystem providing the decomposition of many organic substances necessary to plant, animal and human life.

There are at least 100,000 known species of mold in the world and 1,000 common species in the United States. *Aspergillus*, *Cladosporium*, *Penicillium*, and *Stachybotrys* are known to grow indoors where a favorable environment exists. A consensus of opinion among several governmental agencies, the Centers for Disease Control (CDC), mycologists, and microbiologists is that mold may start to grow and spread within 24-48 hours. It grows exponentially when the right conditions exist: 1) Food source—such as wood, paper, sheetrock, insulation, and natural fibers; 2) Temperature—generally molds grow best in conditions 68-86°F; 3) Moisture—most molds can survive in Rh as low as 65%.

Spore germination is the change from an inactive to an active phase in the life cycle of a mold spore. The rate of spore germination can begin within 12-24 hours where favorable conditions exist. Molds are made up of masses of filament-like cells called hyphae. Under the appropriate conditions, the hyphae will grow into long intertwining strings that form the main body of the mold, or mycelium. It is this mass of mycelium that is visible to the human eye. Mold can also spread if a fragment of broken hyphae is transplanted to an area with adequate moisture and organic matter for food.

Media attention, litigation and science have been the driving forces behind the public heightened awareness of toxic mold. An excerpt from the Environmental Health Investigations Branch of the California Department of Health Services fact sheet *Misinterpretation of Stachybotrys Serology* in November 2000 read, "Recently both scientific inquiry and national news media attention have raised concerns about possible health consequences of human exposure to indoor mold growth. Much of this concern has been generated by discovery of toxigenic mold species in water-damaged buildings."



Aspergillus and Penicillium colonization on drywall

Litigation to determine responsibility is not uncommon. Lawsuits have been filed against former property owners, builders, subcontractors and insurance companies. Mealey's Publications, a nationally recognized source for litigation information, released the *Mold Litigation Report* in March 2001 which reports on numerous cases from around the country. These cases represent only a small portion of what is believed, by Mealey's, to be thousands of mold-related cases nationwide. James Fisher, an Indianapolis attorney involved in a mold-related case, reported to the *Indianapolis Star*, "It used to be that people didn't recognize why they were having respiratory problems" and attributes the rise in mold-related claims to increased awareness. Mold is being compared to asbestos in terms of abatement and remediation costs.

Scientific research has linked toxic mold (fungi) found in the indoor environment with ill health of building occupants. The risk to building occupants and cleanup workers is increased when there is visible mold contamination. The 1993 New York City Department of Health (NYC Guidelines), *Guidelines on Assessment and Remediation of Fungi in Indoor Environments*, was revised and expanded in 2000 to establish policies for medical and environmental evaluation and remediation of mold contaminated buildings. This document states that individuals at greater risk for adverse health effects are the elderly, infants and children, immune compromised people, pregnant women and individuals with existing respiratory conditions such as allergies, multiple chemical sensitivity, and asthma. Allergic reactions may be the most common health related problem of mold exposure. A 1999 Mayo

Clinic study cites that molds cause most of the chronic sinus infections that inflict 37 million Americans each year.

Many journalists have used the term "toxic mold" when referring to molds that have been implicated in severe health reactions in humans. This term generally refers only to those molds capable of producing mycotoxins. Mycotoxins are toxic chemicals produced during digestion to inhibit or prevent the growth of other microorganisms and they can be found both in living and dead fungi; however, not all molds produce mycotoxins. Exposure to mycotoxins can present a greater health hazard than the mold and can cause short and long term health effects. While most molds aren't hazardous to healthy individuals, too much exposure may cause immune compromised people to develop flu like symptoms or worsen their existing symptoms. According to the Minnesota Department of Health, *Stachybotrys*, when inhaled or ingested, can cause nasal and sinus congestion, cough, wheezing or other breathing difficulties, sore/hoarse throat, skin and eye irritation, upper respiratory and sinus infections.

Health problems are primarily caused when mold spores enter the air and humans inhale them. When large numbers of spores are inhaled through the mouth or nose deep into the lungs, they can interact with the human tissue and blood system and result in serious health problems. Mold spores are invisible to the human eye and can become airborne when disturbed by air movement, handling a mold-contaminated item, cleaning, and demolition activities. Contact with moldy surfaces can cause skin irritation and ingestion can cause serious food poisoning. Most mold spores are 5-10 microns in size with one micron



Removal of mold infested materials can cause health problems

requires personal protective equipment (PPE) such as full-body suits, gloves, and eye protection. Clean water floods that are properly dried out within 48 hours generally do not require extensive demolition of porous building materials and containment procedures.

A building suffering from fungal contamination is not a safe environment. During exponential growth many fungi release volatile organic compounds (VOCs) causing moldy and musty odors. The occupants should be evacuated when significant visible mold colonization is diagnosed and returned only when the building is cleared for re-occupancy.

Porous materials such as ceiling tiles, carpet and pad, cellulose insulation, fabrics, plaster, sheetrock, wallpaper, etc. with visible mold contamination should be discarded. Items with visible growth or settled spore contamination should be evaluated for structure damage, discoloration from water damage, and financial or sentimental value as compared to cost of remediation vs. replacement. These items are seldom completely restorable due to discoloration, staining, or physical damage caused by the mold. Building and/or contents contaminated with settled spores can often be restored depending on the exposure time. Textiles (clothing, linen, etc.) can generally be restored by standard laundry or dry cleaning methods. Upholstery items that have settled contamination and that have not been used while contaminated can be restored with detailed HEPA vacuuming and professional dry cleaning techniques. Non-porous materials such as brick, glass, masonry, metal,



Stained and discolored artwork and photographs damaged by water and mold

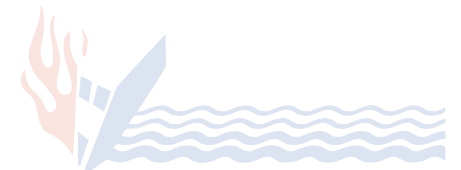
plastic, tile, wood, etc. should be able to be cleaned and treated in place. Surface mold such as wood framing should be cleaned and treated in place while rotted wood should be removed and replaced. Transitory mold (carried by air currents) can be HEPA vacuumed, wiped down with a biocide and professionally cleaned.

The Environmental Protection Agency (EPA) states in their *Mold Remediation in Schools and Commercial Buildings* that mold remediation has been completed when: 1) The water or moisture problem has been completely fixed; 2) Visible mold, mold-damaged materials, and moldy odors should not be present; 3) Clearance sampling after remediation has been completed; 4) Site visit shortly after remediation should show no signs of water damage or mold growth; and 5) Building occupants should be able to re-occupy the building.

Buildings contaminated by visual mold are very expensive to restore to pre-loss condition. Jerry Johns, President of Southwestern Insurance Information Service, an industry trade group, stated on June 17, 2001 that, "In the last six months in Texas there were over 1,000 mold-related claims and the industry estimates show that the cost of an average mold-related claim can range from \$10,000 to \$100,000." When water damage occurs in a building time is critical because mold begins to germinate within twelve to twenty-four hours. Fortunately, most water damages do not require the mold contamination protocol discussed in this article.



Framed historic newspaper discolored by water damage





Mold growth on wood furniture

equaling .00003937 of an inch. These spores are so small that a person can inhale as many as 750,000 per minute. In contrast, a single human hair is about 75 microns in diameter.

Many question if property and casualty insurance policies cover the remediation of mold infestation and subsequent structural repairs. According to an article in the August 2000 Claims Magazine, *Mold & Mildew: A Creeping Catastrophe*, Everette Lee Herndon, Jr. states, "Some of these losses are covered, some are not. If the water damage is the result of a covered loss, the resultant damage, mold (including fungi, mildew, etc.), is probably also covered." In order to avoid paying for remediation of pre-existing mold this article urges adjusters to make a site visit within the first 24-72 hours, stating that any molds visible in the first two days after water damage are normally pre-existing and therefore generally not covered under the claim loss.

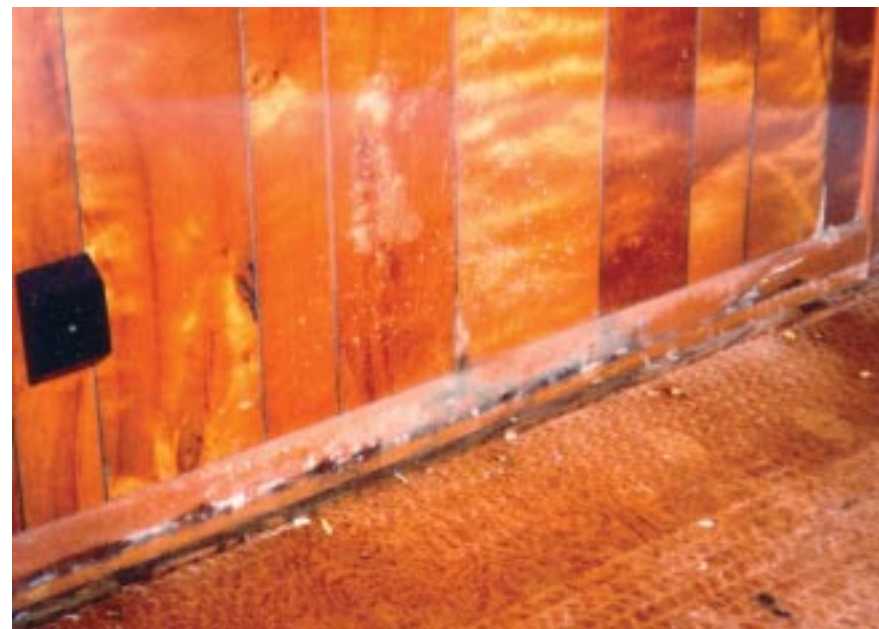
Mold contamination does not occur in every water damage loss. An adjuster must look for mold when circumstances warrant and must call in appropriate qualified experts for guidance when needed. Mold remediation may be expensive, but failure to remediate a covered damage may be even more expensive in comparison to the health issues and financial impact. Everette Lee Herndon Jr., claims consultant and expert witness, recom-

mends that a mold remediation contractor should be contacted when there is more than a small area (greater than 10 sq. ft.) of visible mold contamination.

Visual inspection is the most important step in identifying possible mold contamination. Its purpose is to determine the extent of mold contamination and assist in developing the scope of work. The presence of black, gray-brown, or pink stains on structure and content materials is visible proof that mold is growing in the environment. The inspection should focus on any areas damaged by water including hidden areas, e.g., behind cabinets, in attics, under carpets, and inside wall/ceiling cavities. Areas with porous materials or soft goods exposed to high humidity or water for more than 72 hours have greater potential for mold contamination. According to the Insurance Services Office (ISO), the cost of inspection and mold testing by an Indoor Air Quality (IAQ) Consultant starts at about \$1,500 - \$3,000 and larger commercial structures can be many times that amount.

If mold is not visible, but there is a musty/moldy smell the contamination may be hidden in the ductwork, wall/ceiling cavities, or behind vanities and cabinets. An IAQ Consultant should be consulted when mold contamination is extensive or there is a stated health concern. These specialists include

industrial hygienists, microbiologists, mycologists, indoor environmental scientists/consultants and some public health officials. They can conduct testing before remediation work begins and clearance testing prior to re-occupancy. According to the NYC Guidelines, visual inspection and sampling (surface and bulk) are usually adequate for determining the scope or work.



Wood products are an excellent host material to support mold growth

A thorough remediation of moldy building materials and personal property are necessary to prevent building occupants from developing allergies or other health related complications and restore the damaged property to pre-loss condition. The NYC Guidelines state, "The goal of remediation is to remove or clean contaminated materials in a way that prevents the emission of fungi and dust contaminated with fungi from leaving a work area and entering an occupied or non-abatement area, while protecting the health of the workers performing the abatement." Mold remediation should use the processes that are appropriate for the level of contamination in a structure. The EPA published *Mold Remediation in Schools and Commercial Buildings* in March 2001 and it suggests that remediation should be based on the surface area affected, i.e., small area (less than 10 sq. ft.), medium area (10-100 sq. ft.), and large (greater than 100 sq. ft.). The type of surface and its porosity will determine the remediation process. A general rule of thumb is that porous materials should be removed while nonporous materials can be cleaned.

Current mold remediation procedures are based on modern research, best professional judgments and job-site performance. Proper identification and remediation of mold contamination requires visual inspection, microbial



Mold infested carpet and pad are porous materials and should be removed and replaced

sampling, cleanup and containment strategies. To prevent a question regarding conflict of interest for the remediation company it is recommended that an independent IAQ Consultant collect mold samples to confirm what types of fungal species are present and assist in the preparing of a remediation and containment protocol. This protocol follows guidelines similar to those used for hazardous waste cleanup of asbestos and lead.

Mold remediation strategies should be job-site specific and take into account the sensitivities of the building occupants, how close they are to the work area and the quantity of airborne mold during demolition and cleaning. A mold remediation strategy should address the following ten areas: 1) temporary relocation of occupants; 2) protection and cleaning of contents; 3) HVAC protection or remediation; 4) containment with HEPA filtration (source, local or full scale); 5) scope of work beyond the immediate work area; 6) demolition, debris removal and decontamination procedures; 7) negative pressurization of work area; 8) worker personal protection plan; 9) building dry-down; and 10) reconstruction requirements.

Microbial contamination is a health and safety concern if cleanup and drying are not accomplished quickly. Competent and certified mold remediation companies familiar with the precautionary measures required for protecting property and the health and safety of the building occupants should perform the remediation. Working in extensively contaminated environments



Worker with personal protection equipment HEPA vacuuming mold from artwork