

**Showalter Property Consultants**  
410-827-5912 Maryland Office  
305-304-2143 Florida Keys Office

**Mold 101**

Molds are fungi that can be found both indoors and outdoors. A misconception is all black molds are toxic. Actually some other colored molds are more toxic than the "black mold". Some fungi are so nasty they have even been studied for use in biological warfare. Mold has been around for a long time and is even referenced in the bible. Biblical procedures for remediation of mildew are found in Leviticus Chapter 14, verses 33-47. More recently there have been several high profile lawsuits concerning mold. Many insurance companies are limiting or excluding mold from home owner's policies, they are now utilizing a tracking system called the CLUE report. The CLUE report is essentially a record of how you have personally filed claims as well as a detailed history of claims filed on any home.

Mold is also a moisture-indicating organism. In many circumstances it is a visual indicator of a water related incident. This is referred to as colonization. This may be due to a plumbing or building envelope leak or elevated humidity. Moisture levels in most framing and trim woods are at risk when they exceed 20% moisture content. Most agree indoor humidity levels should be kept below 60% to minimize the risk for mold growth. Since mold naturally exists in both indoor and outdoor environments why the problem?

The combination of natural levels of indoor mold and elevated moisture can result in indoor mold amplification, which may lead to health and structural concerns. In many instances the spores are preexisting on drywall and lumber stored outside. Stored building materials are also at risk on the construction site for mold spores contamination. Another method for mold amplification is poor building techniques and designs. House wrap, siding, windows and

roof coverings not installed to the manufacturers specifications. Contractors in these cases set themselves up for litigation. Poor building designs include the use of blind and dead valleys on the roof.

When performing a mold investigation there are procedures that should be followed. We listen to the client for their experience and concerns. Was there a water incident, have they developed allergies or worse, is there a musty odor? Some molds may produce various odors, nasal, throat or eye irritations. Next using a flashlight we look for visual indicators, water stains and any fuzzy growth or colonization.

In the event there is a suspect area a moisture meter is an invaluable tool. I recommend a dual function moisture meter. Using the RF non-destructive mode, which is helpful to locate moisture behind drywall, masonry, ceramic tile and vinyl flooring.

The pins on conductive or resistance mode measures moisture content in wood. When using a moisture meter you need to be aware building materials differ greatly in moisture content. One method is to compare a baseline (non-suspect area) to the suspect area for an elevated reading. There are dozens of moisture meters on the market that range in the range of the scale, digital, analog to the depth of the reading in RF mode. A conductive moisture meter can also give a false positive when in contact with efflorescence, which contains salt. You may not be able to feel moisture in the wall, therefore the use of a moisture meter, which detects moisture levels on the inside of the wall cavity, and behind surfaces is recommended. There is also a technology using thermal imaging. This device detects warm and cold areas within the building envelope and can be a non-invasive method of determining moisture and mold risks. If mold is suspected sampling may be useful which may include surface and or air sampling. Many mold abatement companies recommend pre and post abatement air sampling to insure the contractor's work was thorough. Many homeowners and contractors hire an independent environmental consultant to perform this to have a non-biased report. Prior to abatement the source or cause of the mold

contamination must be determined otherwise the homeowner will be repeating this process in the near future.

Once a suspect area is identified the contractor needs to be aware there are procedures and protocols they should follow. The EPA has basic guidelines for mold abatement. If a contractor offering mold abatement or water restoration begins to remove contaminated material and causes a spore release, and did not follow a standard for mold abatement; which includes not only protecting the building but also the employees, that contractor is putting themselves at risk for litigation. If the contractor discovers suspect mold conditions during a renovation process they should call in an environmental consultant. In some cases there could be no indicators or mold until discovery during a renovation. As a contractor if you are offer services working on a building with known mold contamination you should get certified and trained in mold abatement. The contractor must also be aware that furniture, clothing, carpet and other person items may be contaminated and could reintroduce mold spores after abatement. Any personal items not contained or to be saved should be removed from the area of abatement and protected during the abatement procedure.

The size of contamination will dictate the abatement. The area of contamination is detailed in the II CRC S 500, ACGIH, New York City and/or EPA mold abatement protocols. The EPA states a small area of contamination is where the total surface area affected is less than 10 square feet (ft<sup>2</sup>). A medium area of contamination is total surface area affected between 10 ft<sup>2</sup> and 100 ft<sup>2</sup>. A large area of contamination is total surface area affected greater than 100 ft<sup>2</sup>.

At a minimum on small areas of contamination the contractor should have all workers using N-95 respirators, gloves and goggles. Medium to larger jobs the contractor should have all workers using half to full-face HEPA respirators, disposable coveralls and eye protection. The workers may even need tape all seams to prevent spore infiltration. When spraying the sealer use full disposable coveralls, sealed at the

seams with tape and organic vapor respirators. OSHA Respiratory Protection section 1910.134 even has standards for form fitting the respirators requirements for the employer to follow. A good policy to have all employees entering the jobsite sign in and out that they followed the companies personal protective equipment (PPE) procedures.

Larger areas of contamination may require a decontamination area. A containment area should be set using a polyethylene sheet with a slit and flap. This area should be under negative air pressure with a HEPA fan unit. Any areas leading to non-contaminated areas of the building should be sealed off from the abatement including all HVAC registers and ducting.

Contaminated material should be carefully removed and in some cases put into plastic bags to be taken to appropriate disposal. In severe contamination care not to contaminate outside may need to be considered. All surfaces should be vacuumed with a HEPA vacuum or wet VAC (depending on surface). Abatement of the mold may include careful removal of drywall (so you minimize any areolation of the mold spores). Cleaning of framing members with a biocide, scrubbing visible mold with a wire brush, sanding and encapsulating the affected areas with a paint sealer such as IAQ 6000 or comparable. Before sealing an air scrubber should be used which circulates the air over a HEPA filter and essentially cleans the air. Once this is complete post abatement sampling is recommend ensuring a thorough abatement was performed and in the event of future contamination or a moisture event, the contractor is not blamed. Drywall cannot be topically treated since the mold may be growing on the back inside of the wall cavity where the treatment cannot reach. In some extreme cases buildings may have to be abandoned and even demolished.

The contractor should have specification in writing for abatement procedure for the job. Larger residential or commercial jobs may require an industrial hygienist to write the abatement procedures. It is a good practice for the contractor not to advertise outside or on the vehicles about mold abatement. The

job should be confidential on the client's behalf. Having a box truck with 2' tall MOLD ABABEMENTENT letters does not benefit the client.

There are methods, in which the building is heated to excessive temperatures, but the humidity must be lowered or spore release may result. The use of Chlorine Dioxide has been successfully utilized for the killing of mold spores. The building is tented and a gas is introduced and mold spores are killed. The main concern with any abatement however, is the removal of spores. Killing the spores in many cases is not enough, if any occupants have a hypersensitivity to any remaining dead spores.

There is a lot of debate throughout the industry to exactly how to perform a proper abatement but everyone if you don't follow procedures and ignore recognized and accepted methods you are putting yourself and your company at risk of a lawsuit.

All rights reserved do not reprint without written permission from Showalter Property Consultants