General Information on Mold

Mold can be found almost anywhere on Earth that provides livable temperatures, a food source, and moisture. It comes in a wide variety of colors, grows in colonies, and can emit odors. Some molds release toxins, and all release spores which generally travel through the air - in fact, air almost always contains some mold or mold spores.

How Mold Grows

Molds are a subset of the fungi family and are common, abundant, and an essential part of the world's ecological system. Fungi are found nearly everywhere and are necessary for recycling organic material, which is required to sustain plant and animal life. There are reportedly more than 100,000 species of mold on Earth.

Mold, like most life forms, need three basic things in order to survive: water; a food source; and a livable temperature. Molds produce tiny spores to reproduce just as plants produce seeds. These spores travel through the indoor and outdoor air continually, moving into and out of buildings as air is exchanged and with the movement of people, pets, and their belongings.

The spores settle on surfaces and, when conditions are favorable, they begin to consume organic material in their immediate vicinity. Molds can grow on cloth, carpet, leather, wood, wallboard, household dust, foods and on anything else that is made of organic material. When excessive moisture or water accumulates indoors, mold growth may occur, particularly if the moisture problem remains undiscovered or un-addressed. There is no practical way to eliminate all molds and mold spores in the indoor environment; the way to control indoor mold growth is to control moisture.

Controlling indoor air moisture will limit the probability of supporting mold growth from condensing water on interior surfaces; such as on walls, windows, and areas near air conditioning supply registers. Relative humidity is a measure of the amount of water vapor in air. Moisture sources that increase indoor air relative humidity are: habitation (people release moisture), bathing, cooking, plants, washing and air-drying of dishes and clothes, unvented combustion appliances, humidifiers, and outdoor ventilation air in humid climates. Another moisture source is water from leaks; such as from pipes, rain water leakage through windows, roof flashing, ice dams, etc.

While recommendations as to what level of indoor relative humidity best controls the growth of mold, most sources suggest no more than 40-50%. Higher levels can promote the growth of mold - lower levels may produce an uncomfortably dry living environment for people.

Mold and Health

The link between mold and human health is a subject open to debate, and currently under review by a wide spectrum of medical professionals and scientists.

Mold produces several biological agents, which may impact on human health. In addition to mold spores themselves, some molds can produce a substance called mycotoxin (a defense mechanism against competing organisms), which can cling to the surfaces of spores. Some molds also produce volatile bioaerosols (some resulting from the digestive process) that are released directly into the air. These compounds often have strong, unpleasant odors (a musty smell) that are commonly associated with molds.

According to the Centers for Disease Control, "The common health concerns from molds include hay-fever like allergic symptoms . . .. People may experience symptoms such as nasal stuffiness, eye irritation, or wheezing when exposed to molds."

The CDC notes that those with greater sensitivity or greater exposure levels to higher

concentrations of mold may experience stronger symptoms, including breathing difficulties and related allergic reactions.

A mold infection is also possible, but highly uncommon and generally limited to those with suppressed or compromised immune systems. Some mold mycotoxins have been shown to cause injury to cells in laboratory settings, and there have been reports claiming memory loss and internal bleeding from mycotoxin exposure, but according to the CDC, no provable links between such mold exposure and toxic effects on humans has been established.

Mold Prevention

· The most practical approach to limit mold growth is early detection and prompt resolution of excessive moisture. If you can see mold or detect an earthy or musty odor, you can assume you have a moisture problem that must be resolved to achieve a permanent solution to arresting mold growth. Mold growth is found behind walls or under materials where water has damaged surfaces. Look for discoloration and mold on surfaces.

· Controlling indoor air moisture will limit the probability of supporting mold growth from condensing water on interior surfaces; such as on walls, windows, and areas near air conditioning supply registers. Relative humidity is a measure of the amount of water vapor in air. Relative humidity meters are useful for detecting excessive moisture and they are available from most hardware stores. Moisture sources that increase indoor air relative humidity are: habitation (people release moisture), bathing, cooking, plants, washing and air-drying of dishes and clothes, unvented combustion appliances, humidifiers, and outdoor ventilation air in humid climates.

· Another moisture source is water from leaks; such as from pipes, rain water leakage through windows, roof flashing, ice dams, etc.

· Listed below are strategies that can help minimize mold growth.

· Take notice of musty odors in the home because they indicate the presence of mold. Look for visible signs of mold and abate the moisture source.

· Watch for condensation and wet spots and eliminate sources of moisture.

· Prevent moisture resulting from condensation by increasing surface temperatures or reducing moisture levels in the air. To increase the surface temperature, insulate or increase the circulation of heated air. To reduce moisture levels in the air, repair leaks, increase ventilation (if outside air is cold and dry), or dehumidify.

· Perform building and HVAC inspections and maintenance. Repair the condensate drain if the air conditioning system's drip pan overflows with water.

· Vent clothes dryers to the outdoors.

· Run the air conditioner and/or a dehumidifier during the humid months of the year. Controlling indoor air moisture to below 65 percent relative humidity will limit the probability of supporting mold growth.

· Keep the relative humidity as low as is comfortable during the winter season for houses in cold climates. Mold growth on interior surfaces of exterior walls can occur during the heating season. The combination of cool surfaces and excessive humidity can cause a high near-surface relative humidity and condensation. Experience has shown that an air moisture level below 40 percent relative humidity during the heating season will prevent condensation on surfaces. This level of humidity may not be appropriate for houses in severe cold climates. A sign of excessive humidity is condensation on the inside of windows. If condensation is present for prolonged periods take

steps to reduce the moisture source or increase ventilation.

· Clean and dry any wet or damp areas within 48 hours.

· Provide drainage for roof rainwater and maintain the ground with a slope that drains water away from the foundation.

· Repair water leaks in the building envelope as soon as possible.

· Do not store organic materials such as paper, books, clothes, etc., in humid locations (such as in unconditioned basements).

· Exercise extra care when cleaning up after water damage from flood and sewer water.

· Consider the use of dehumidifiers in areas such as unconditioned basements.

Important Documents

Moisture Test Guide for Wood Frame Construction Clad with Exterior Insulation and Finish Systems (EIFS) Version 3.01
Controlling Moisture in Homes
Building Moisture and Durability - Past, Present and Future