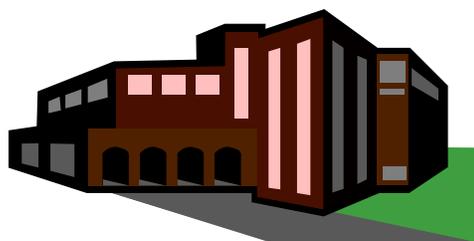


Mold

In Your Home and at Work



Forsyth County
Office of Environmental Assistance and Protection

What is mold?

Mold is a term used to describe a type of fungus that can be found all year round both indoors and outdoors. This fungus can be a fuzzy-looking growth that appears on the surface of organic or porous materials in damp conditions. Mold may be black, gray, green, yellow, orange, or various other colors and may have a velvety or wooly texture. There are many different species of mold, some of which can be detected by a musty odor.

Outdoors molds live in the soil, on plants, and on dead or decaying matter. Mold growth is encouraged by warm and humid conditions, although it can grow in cold weather. Most mold found indoors comes from outdoor sources. Mold needs moisture to grow and becomes a problem only when there is water damage, high humidity, or dampness. Common sources of indoor moisture that cause mold problems include flooding from roof or plumbing leaks, or from rain water that gets into basements and crawl spaces. Bathroom showers and steam from cooking may also create mold problems if not well ventilated.

grow on wood, carpet, foods, and insulation. Building materials are susceptible to mold growth when they are exposed to excessive moisture, and especially if they remain wet. Molds reproduce by making microscopic cells or spores that usually can not be seen yet flow through the air continually. When mold spores land on a damp spot indoors, they may begin growing and digesting whatever they are growing on in order to survive. Molds gradually destroy the things they grow on.



Molds can grow on many types of substances. There are molds that

Why is mold a concern?

Small amounts of mold growth at home or at work are not a major concern. Mold should not be allowed to grow and multiply indoors. Large amounts of mold growth may cause nuisance odors and

health problems for some people. Mold can also damage building materials, finishes, and furnishings, and in some cases, cause structural damage to wood.

What is mildew?

Mildew is a form of mold that grows when mold spores settle on a surface. It commonly develops on damp surfaces in warm, poorly ventilated, dark areas. Mildew thrives in warm, humid weather. A musty odor often indicates mildew. Bathrooms, closets, basements, and crawl spaces are prime areas for mildew. If you notice a black, gray, white, or even pink splotch on your wall, furniture, bathroom tile, draperies, or even on your clothes, it is probably mildew. Mildew can grow anywhere there is moisture, dirt, and heat.

A bedroom closet that stores clothing can attract mildew when it is warm and humid and the closet door stays closed with no ventilation. If a home is closed up for the summer with no ventilation or circulation mildew can form on the furniture and create a strong odor for you to come home to from vacation. Mildew can rot fabrics and discolor walls and wood surfaces if allowed to continue to grow.

The best way to prevent mildew is to keep your home, furnishings, and fabrics dry and clean. Good ventilation is also necessary especially if you are going to be away for some time. Simply leaving the air conditioning on a low setting can provide enough circulation in the summer when a house is empty and it is humid outside.

Mildew that does form on clothing and other materials can be cleaned without disposing of the materials. The proper cleaners should be used to clean the mildew so as not to ruin the clothing or furniture. There are several commercial mildew removal products on the market.

What is black mold?

Black, or Toxic Mold, as the media refers to it is usually associated with a specific type of mold and heavy water damage. Black mold is usually associated with *Stachybotrys chartarum*, a type of greenish-black mold that results from severe flooding. Hurricanes that cause severe flooding of houses that stay wet

for some time may develop black mold inside. Not all molds that appear to be black are *stachybotrys*. The known health effects from exposure to *stachybotrys* are similar to other common molds, but have inconclusively been associated with more severe health effects in some people.

How does mold affect people?

Most people have no reaction when exposed to mold. Allergic reactions similar to common pollen or animal allergies, and irritation are the most common health effects for individuals sensitive to mold. Allergic reactions include irritation of the eyes, nose, throat, or lungs. Our reactions to allergens vary greatly depending on the individual, so we cannot say how much mold is too much. Some individuals are only sensitive to some types of mold.

There is a wide variability in how people are affected by mold exposure. Elderly people, infants and children, and asthma sufferers may be affected more severely and quickly than others. Those with special health concerns should consult their doctor if they are concerned about mold exposure. Symptoms that may seem to occur from mold exposure may be due to other causes, such as bacterial or viral infections or other allergies.

In most cases symptoms from mold are temporary and eliminated by correcting the problem.



How can I be exposed to mold?

Inhalation or touching mold or mold spores may cause allergic reactions in sensitive individuals. These reactions may be immediate or delayed. Some individuals are affected by

the musty odor of mildew, and the majority of individuals have no reaction at all to exposure to the molds present in indoor and outdoor air.



Sources of mold:

Mold growth may occur in your home/business if there is sufficient moisture and organic material. Moisture may be in the form of standing water, condensation, or high humidity. Indications of a moisture problem may include discoloration of the ceiling or walls, warping of the floor, or condensation on the walls or windows. Organic materials can include ceiling tile, drywall, wood, or carpet padding.

Common sources of moisture include:

- Flooding
- Roof leaks
- Plumbing leaks
- Drainage problems
- Damp basements and crawl spaces
- Steam from the bathroom or kitchen

- Condensation resulting from poor or improper insulation or ventilation
- Humidifiers
- Wet clothes drying inside the home or a clothes dryer venting indoors
- Poor or improper ventilation of combustion appliances

There are some areas of the home that are always susceptible to mold growth and should be part of routine cleaning to keep them under control. These areas include:

- The seal on the refrigerator door
- Shower curtains
- Shower stalls and bathroom tiles
- Window moldings
- Surfaces on and around air conditioners

How do I know if I have a mold problem?

If there is mold growing in your home or office you will usually see it or smell it. Looking for evidence of water damage and visible mold growth should be the first step in detecting a mold problem. In most cases a mold problem will find you in the form of the musty odor that comes from mildew and some other molds, or you may find evidence of water damage, water stains, or standing water from a plumbing leak or rain entry sitting in a humid area for an extended time. For example, if water runs into a crawl space of your home and sets there for a while, especially in warm weather, mold is liable to grow on the wood beams in the crawl space in the form of a black, fluffy looking growth. It is very easy to detect. Hidden mold such as behind walls or behind wall paper will sometimes have an

odor or will eventually keep growing until it is visible, sometimes growing right through sheet rock or paint coverings.



Should I run air tests to see if I have a mold problem?

If you do not see mold or smell a potential mold problem, then there should be no need to run air tests to see if you have a mold problem. Testing for mold can get expensive and you should have a valid reason for running the tests such as an odor or visible growth.

In addition, there are no standards for “acceptable” levels of mold in the indoor environment. When air sampling is run, the results are usually used to compare the levels of mold in the indoor environment with those found outdoors. If the levels inside

are that much higher than the levels outside, then there may be a problem indoors. Air sampling for mold is also only telling you what the levels are at the given times that the samples are run. They could vary greatly at different times of the day, week, or month. If you know you have a mold problem by smell or sight, then the levels in the air is irrelevant. It is more important to spend time and resources getting rid of the mold and solving the moisture problem that is causing the mold situation.

Should mold be sampled to identify what type of mold it may be?

In most cases, if visible growth is present, sampling for the species (type) of mold is unnecessary. If mold is visible the cause of the mold should be determined and fixed, and then the mold properly removed. What type of mold it is does not make a difference when there is a problem and it needs to be fixed. If samples are taken to determine species, then the results should be to help answer a specific question. For example:

- If a source for mold cannot be determined, mold found indoors may be identified to determine if it is from an outside source.

- Medical diagnosis may require the type of mold present to verify an allergy or reaction. Individuals can be allergic to one or more types of mold and to determine which type(s) cause the reaction, identification may be necessary.

Any analysis for mold should be performed by an experienced and proficient laboratory. The U. S. Environmental Protection Agency (USEPA) recommends using an American Industrial Hygiene Association (AIHA) EMLAP accredited lab.

What do I do once I have found mold?

If there is mold growth in your home or business, you must clean up the mold and fix the water problem that contributed to the mold. If you clean up the mold, but don't fix the water problem, then the mold will come back.



Who should do the cleanup?

Cleanup should depend on the size of the problem. The U. S. Environmental Protection Agency (USEPA) recommends that if the moldy area is less than ten (10) square feet (roughly a 3ft. by 3 ft. patch), in most cases, you can handle the job yourself following the USEPA guidelines of personal protection and proper cleaners (see Related Resources at the end of this brochure).

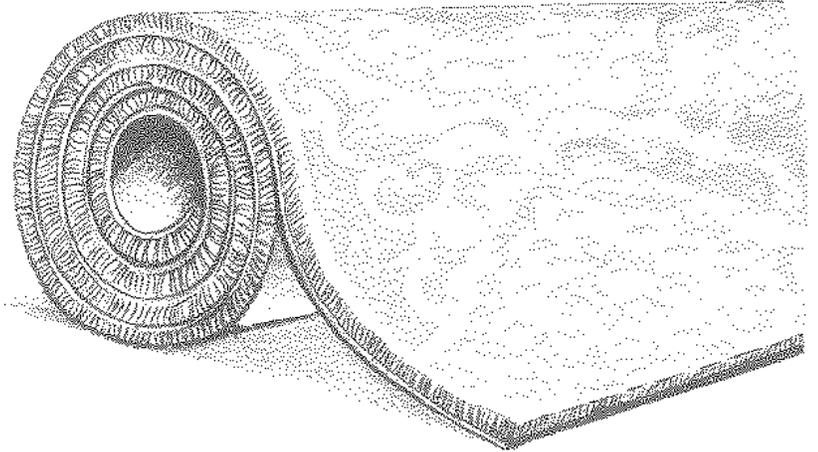
There are cases though when you should not try and do the job yourself. For example:

- If there has been a lot of water damage and there is substantial mold growth (greater than 10 square feet).
- If the water and/or mold damage was caused by sewage or other contaminated water, then you should use a professional with experience in cleaning and fixing buildings damaged by contaminated water.
- If you suspect the heating/air conditioning system (HVAC) is causing the mold or may be contaminated with mold, then an HVAC expert should be contacted.

If a contractor is hired to perform the clean up, make sure the contractor has experience working with mold. Check their references and inquire about their cleanup procedures. Clean up should not begin until the source of the problem is determined and fixed.

The cleanup process may include some or all of the following steps:

1. Porous materials with extensive mold growth should be discarded (drywall, carpeting, paper, and ceiling tiles).
2. All wet materials should be thoroughly dried or discarded.
3. Mold growing on hard surfaces (wood and concrete) can be cleaned.
4. Do not paint or caulk moldy surfaces. Clean up the mold and dry the surfaces before painting. Paint applied over moldy surfaces is likely to peel or have the mold grow through the paint.
5. Areas where mold has been cleaned should be monitored periodically for new mold growth or signs of additional moisture. This may indicate the need for further repairs or removal of material.

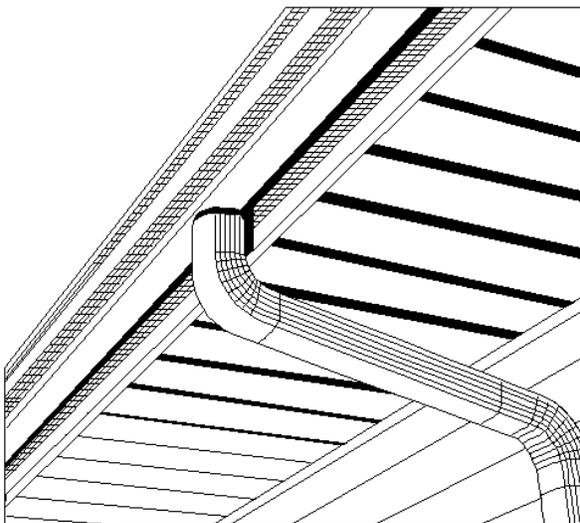


How do I know when the remediation or cleanup is complete?

1. The water or moisture problem must be completely fixed before the cleanup or remediation can be considered finished.
2. Visible mold and moldy odors should not be present.
3. People should be able to occupy the area without health complaints or physical symptoms related to the mold problem.
4. The site should be revisited shortly after cleanup and periodically thereafter to check for signs of water damage or mold growth.

Ways to control moisture to prevent mold:

1. When water leaks or spills indoors, ACT QUICKLY and dry it up immediately. The longer water sits, the more chance of mold growing.
2. Clean and repair roof gutters regularly. This prevents water from running into or under a house.
3. Make sure the ground slopes away from the building foundation, so that water does not enter or collect around the foundation.
4. Keep air conditioning drip pans clean and the drain lines unobstructed and flowing properly.
5. Keep indoor humidity low by using air conditioners, de-humidifiers, exhaust and ceiling fans as necessary.



Mold Facts

- Mold growth is caused by some type of moisture.
- A mold problem can usually be seen or smelled without the need for testing.
- Exposure to mold can cause health effects in some people.
- Reactions to mold can be immediate or delayed.
- Everyone is not allergic to mold or to all types of mold.
- Most people have no reaction to mold.
- Mold grows year round, inside, and outside.
- Mold growth should be attended to and the source fixed as soon as possible.
- There are currently no standards for sampling the air for mold.
- Black or toxic mold is usually the result of heavy water damage.
- In most cases, if a water problem is corrected and dried within 24 to 48 hours, a mold problem will not occur.

For Additional Information:

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Related links & resources

U. S. Environmental Protection Agency (USEPA)	www.epa.gov
Occupational Safety & Health Administration (OSHA)	www.osha.gov
American Industrial Hygiene Association (AIHA)	www.aiha.org
Center for Disease Control (CDC)	www.cdc.gov
North Carolina Cooperative Extension Service (CES)	www.ces.ncsu.edu

Publications

OSHA	Preventing Mold Related Problems in the Indoor Workplace www.osha.gov/Publications/preventing mold
EPA	A Brief Guide To Mold, Moisture, and Your Home www.epa.gov/iaq
CES	Rid Your Home of Mildew, Insite 2 Mildew Prevention in the Home FCS-237 Moisture Control & Prevention Guide FCS-486 (www.ces.ncsu.edu/fcs/housing/pubs)