



Shrinking time  
between disaster  
and recovery.

# Mold Remediation Guide

This guide provides an overview on mold and walks you through an effective mold remediation process, which can be undertaken with help from your family and/or neighbors. **Remember, you DO NOT and SHOULD NOT have to spend thousands of dollars on mold remediation.**

## An Overview of Mold

### WHY IS MOLD GROWING IN THE HOME?

Molds are part of the natural environment. Outdoors, molds play a part in nature by breaking down dead organic matter such as fallen leaves and dead trees, but indoors, mold growth should be avoided. Molds reproduce by means of tiny spores; the spores are invisible to the naked eye and float through outdoor and indoor air. Mold may begin growing indoors when mold spores land on surfaces that are wet. There are many types of mold, and none of them will grow without water or moisture.

### CAN MOLD CAUSE HEALTH PROBLEMS?

Because molds produce allergens (substances that can cause allergic reactions), irritants, and in some cases, potentially toxic substances (mycotoxins), they have the potential to cause health problems. Inhaling or touching mold or mold spores may cause immediate or delayed allergic reactions, which could include hay fever-type symptoms, such as sneezing, runny nose, red eyes, and skin rash (dermatitis), or additional irritation to the throat and lungs. Molds can also cause asthma attacks in people with asthma who are allergic to mold. Research on mold and health effects is ongoing. For more detailed information, consult a health professional.

### HOW DO I GET RID OF MOLD?

Mold and mold spores occur naturally but will not grow if moisture is not present, and indoor growth can and should be prevented or controlled by controlling moisture indoors. If there is mold growth in your home, you must clean up the mold and fix the water problem. Professional mold remediation services can cost thousands of dollars, and prices can go up even further after a disaster. **In many cases mold is something you can safely, effectively and much more affordably remediate yourself with the proper supplies and by following proper procedures.**

Before beginning, check with your State to see if there are any mold regulations in place; some states do have mold assessment and remediation licensing rules, but they typically exempt homeowners who are doing remediation in their own homes. Also check with your insurance company to see if your policy has any requirements regarding mold remediation.

After checking and complying with any applicable requirements, you can use the tips and step-by-step techniques in this guide to effectively clean up mold in your home so you can move forward with repairs or rebuilding.

### COMMON SOURCES OF EXCESS MOISTURE AND MOLD GROWTH INCLUDE:

- Roof leaks and associated moisture in walls, ceilings and attics
- Wet subfloor or wet carpet and/or flooring
- Water sitting in a basement or crawl space and creating high humidity in home.
- Plumbing backups
- Mold spores in HVAC ducts
- Inadequate attic ventilation

# Mold Cleanup Guidelines

The tips and techniques presented in this section will help you clean up your mold problem. Professional cleaners or remediators may use methods not covered in this publication. Please note that mold may cause staining and cosmetic damage and it may not be possible to clean an item so that its original appearance is restored.

- Fix plumbing leaks and other water problems as soon as possible. Dry all items completely.
- Non-porous items like plastics and metals can be scrubbed with detergent and water and dried.
- Absorbent or porous materials, such as ceiling tiles, insulation, and carpet, may have to be thrown away if they become moldy. Mold can grow on or fill in the empty spaces and crevices of porous materials, so the mold may be difficult or impossible to remove completely.
- In addition to causing mold growth, flood waters may have carried chemicals, sewage and other contaminants into your home. For more information on sanitizing and disinfecting, visit [www.cdc.gov/disasters/floods/cleanupwater.html](http://www.cdc.gov/disasters/floods/cleanupwater.html).
- 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.

## WHAT TO WEAR WHEN CLEANING MOLDY AREAS



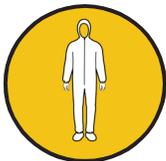
**Avoid breathing in mold or mold spores.** In order to limit your exposure to airborne mold, you should wear an N-95 respirator, available at many hardware stores and online (Cost: \$12-\$25), or respirator with 100-series replaceable filters. Some N-95 respirators resemble a paper dust mask with a nozzle on the front, others are made primarily of plastic or rubber and have removable cartridges that trap most of the mold spores from entering. In order to be effective, the respirator or mask must fit properly, so carefully follow the instructions supplied with the respirator. Please note that the Occupational Safety and Health Administration (OSHA) requires that respirators fit properly (fit testing) when used in an occupational setting; consult OSHA for more information ([www.osha.gov](http://www.osha.gov)).



**Wear gloves.** Long gloves that extend to the middle of the forearm are recommended. When working with water and a mild detergent, ordinary household rubber gloves may be used. If you are using a disinfectant, a biocide, or a strong cleaning solution, you should select gloves made from natural rubber, neoprene, nitrile, polyurethane, or PVC. Avoid touching mold or moldy items with your bare hands. When demolishing moldy construction materials, a pair of leather gloves can be worn over disposable gloves to better protect hands from rough materials.



**Wear goggles.** Goggles that do not have ventilation holes are recommended. Avoid getting mold or mold spores in your eyes.



**Protective clothing.** For large remediation jobs, using disposable, full-body protective coveralls (such as Tyvek suits) and boot covers over your work boots can help to protect people from mold spores and cleaning agents, as well as limit further spread of mold spores outside the work area. After each work day, disposable equipment and clothing should be safely disposed of, reusable equipment and protective clothing cleaned according to the manufacturers' recommendations, regular work clothing washed in hot water and detergent separate from other clothes, and boots cleaned.

## MOLD REMEDIATION PROCEDURE

The purpose of this procedure is to:

- Kill mold caused by flooding
- Dry out materials holding enough moisture to accommodate high mold growth
- Provide a general cleaning
- Prevent new mold growth
- Increase homeowner quality of life and health

## STEP 1

### Locate the source of water/moisture.

Inspect exterior of house for cracks and penetrations that may be allowing water infiltration. The source must be addressed before mold remediation work begins to ensure that mold does not have the opportunity to grow again.\*

## STEP 2

### Use 6mm plastic to contain the area of mold remediation.

Use duct tape or staples to attach sheeting. Tape plastic sheeting around any supply and return vents.

## STEP 3

### All volunteers must be wearing respirators before entering the house during this stage.

Clean out respirators with antibacterial wipes (and let dry) before using. Respirators must be worn for at least 24 hours after wire brushing when in the house.

## STEP 4

### Remove nails and staples.

Remove nails and staples from the face of every top plate, base plate, stud, and ceiling/floor joists. Drive any protruding nails into wooden subfloor.

## STEP 5

### All exposed surfaces of the framing need to be scrubbed with a wire brush.\*\*

Brush up and down, side to side, circularly and diagonally.

- Once surface is scrubbed, mark an "X" on the stud with a permanent marker or wax crayon, indicating a fully scrubbed surface. It is very difficult to discern what has been scrubbed -- marking with an X keeps track. This stage activates any latent mold in the wood, and brings it out to be killed. It also increases the surface area of the framing, allowing fungicide to penetrate deeper to access more of the stud.
- While scrubbing, have volunteers fold shop towels into sixths.
- Apply fungicide to all wood marked with an "X" according to product instructions (when recommended, spray application is often easiest). When wiping down studs with shop towels, flip towel to different clean face each time it becomes dirty and do not re-use dirty towels or re-dip dirty towels into fungicide; once all towel faces have been used, discard and replace with a new, clean towel. After stud is wiped down on all sides, circle the "X" with the permanent marker/crayon.



#### What about Bleach and Vinegar?

**Bleach is effective at cleaning hard, nonporous surfaces ONLY.** It does not clean below the surface to kill mold spores and roots in porous or semi-porous materials like wood, and as a result, mold can and will regrow. The [EPA and CDC do not recommend using bleach for mold remediation](#) and instead recommend using a detergent. EPA-registered commercial fungicides are another option and in addition to killing mold spores and roots, may also be formulated to prevent future mold growth.

Vinegar is commonly accepted to kill about 82% of mold species, but cannot kill ALL species of mold.



**TIMELINE:**  
**2 - 5 DAYS**

## SUPPLIES

RESPIRATORS & FILTERS  
(single-use N95 masks or half masks w/replaceable 100 series filters)

LEATHER WORK GLOVES

NITRILE GLOVES

PROTECTIVE COVERALLS (such as Tyvek)

GOGGLES

DISH SOAP

ANTIBACTERIAL WIPES

WIRE CUTTERS

BROOMS & DUSTPANS

HAMMERS

DEMO HAND TOOLS

6MM PLASTIC ROLL

STAPLERS

DUCT TAPE

UTILITY BLADES

WIRE BRUSHES

PERMANENT MARKERS OR WAX  
CONSTRUCTION CRAYONS

LADDERS

EPA-REGISTERED FUNGICIDE/MOLD  
CONTROL PRODUCT

SPRAY BOTTLES

SHOP TOWELS

TRASH BAGS

HEPA VACUUM

*Beneficial if you have access them:*

FANS & AIR BLOWERS

DEHUMIDIFIERS

AIR SCRUBBERS W/HEPA FILTERS

## STEP 6

### Vacuum all exposed surfaces 3 times.

If you have access to a HEPA (High-Efficiency Particulate Arresting) vacuum: vacuum all exposed surfaces 3 times to minimize the spread of live and dead mold spores.

## STEP 7

### Dispose of mold-contaminated items.

Dispose of mold-contaminated items in sealed, doubled 6mm trash bags, twisted, folded over and taped shut at the top.

## STEP 8

### Framing must be dried out thoroughly before reconstruction, to minimize the possibility of future mold growth.

A common requirement is for framing to test below 17% moisture. Requirements may vary by city and state. The dry out process can be done using a combination of dehumidifiers, fans/air blowers, and heating equipment.

*\* If during your inspection, you find or suspect mold to be in your HVAC system, see the EPA's Air Duct Cleaning Guide for more information and to determine if it may be best to get help from qualified professionals ([www.epa.gov/indoor-air-quality-iaq/should-you-have-air-ducts-your-home-cleaned](http://www.epa.gov/indoor-air-quality-iaq/should-you-have-air-ducts-your-home-cleaned)).*

*\*\* If accessible, operate an air scrubber(s) with a HEPA filter during mold demo and remediation. This equipment helps to filter mold spores from the air and reduces their ability to spread through the construction zone.*

#### HOW DO YOU KNOW WHEN THE REMEDIATION OR CLEANUP IS FINISHED?

**You must have completely fixed the water or moisture problem before the cleanup or remediation can be considered finished.**

You should have completed mold removal. Visible mold and moldy odors should not be present. Please note that mold may cause staining and cosmetic damage.

You should have revisited the site(s) shortly after cleanup and it should show no signs of water damage or mold growth.

People should have been able to occupy or re-occupy the area without health complaints or physical symptoms.

#### HOW SOON CAN YOU REBUILD AFTER REMEDIATION IS FINISHED?

You must make sure wooden framing has completely dried out (below 17% moisture) before installing drywall, flooring, or other finish material. Most molds are able to grow at moisture percentages of 20% or higher in wooden framing. There are three major factors in the speed of drying out wooden framing, which are heat, humidity, and time. Air blowers and dehumidifiers are tools used to speed up the dry-out process. Where possible, turning the heat to 90 degrees can make a large impact in the time it takes to dry out your house framing.

Once the framing has been assessed to meet moisture regulations (typically at or below 17% moisture), you may begin the rebuilding process. If you need to obtain an inspection from a state-licensed mold assessor (check with your state and your insurance company on any applicable requirements first), the inspection must take place after you've finished remediation but BEFORE starting rebuilding.

#### IS SAMPLING FOR MOLD NEEDED?

In most cases, if visible mold growth is present, sampling is unnecessary. Since no EPA or other federal limits have been set for mold or mold spores, sampling cannot be used to check a building's compliance with federal mold standards. Surface sampling may be useful to determine if an area has been adequately cleaned or remediated.

Sampling for mold should be conducted by professionals who have specific experience in designing mold sampling protocols, sampling methods, and interpreting results. Sample analysis should follow analytical methods recommended by the American Industrial Hygiene Association (AIHA), the American Conference of Governmental Industrial Hygienists (ACGIH), or other professional organizations.

For more information, please visit: [SBPUSA.org](http://SBPUSA.org)



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