



Shrinking time
between disaster
and recovery.

Mold Remediation Guide

This guide walks you step by step 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

THE MOLD PROBLEM

Mold is a common problem after flooding. It can be harmful to your health and must be effectively cleared before you can begin rebuilding. But there is good news. **Armed with the right information and tools, mold problems are something most people can successfully and affordably take care of themselves, saving precious dollars for other recovery needs.**

WHAT IS MOLD?

Mold is different than mildew. Mildew is a surface fungus that is typically gray or white in color and can be easily cleaned or wiped away with a simple cleaning agent.

Molds are naturally occurring species of fungus. They grow best in warm, damp conditions--conditions common in flooded homes—and reproduce by means of tiny spores that can float through the air. Molds are typically green or black in color.

Unlike surface mildew, molds have tiny branches and roots, so they grow both on top of and INTO materials like wood. You'll need a fungicide and wire brushes to remove it. There are many different types of mold, but all types require moisture and oxygen to grow. Without these, there can be no mold growth.

MOLD AND HEALTH

Some molds can be harmful to your health, especially for those who are allergic to mold or have weakened immune systems. Because they produce allergens and irritants exposure can cause symptoms like sneezing, runny nose, itchy eyes, and skin rash. More severe reactions include asthma attacks, fever, and infection. Clearing out mold is essential for your family's health.

CLEANING UP MOLD

Indoor growth can and should be prevented or controlled by controlling moisture in the home. If your home has mold growth, you must fix the water problem and clear the mold. 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 procedures.**

Before beginning, check with your State to see if any mold assessment and remediation regulations exist. Some states do have licensing and certification laws, but they typically exempt homeowners doing remediation in their own homes. Also check with your insurance company on anything your policy may say about mold remediation. After checking and complying with any applicable requirements, you can follow the step-by-step process in this guide to effectively remediate mold and move forward with repairs or rebuilding.

COMMON SOURCES OF EXCESS MOISTURE AND MOLD GROWTH:

- Water intrusion from storm and flooding events
- Roof leaks and resulting moisture in walls, ceilings and attics
- Wet subfloor, carpet, and/or flooring
- Standing water in a basement or crawl space
- Plumbing backups
- Mold spores in HVAC ducts
- Inadequate attic ventilation

Supplies Tips

- All supplies can be purchased on Amazon or at your local home improvement store for around \$500-\$700, depending on the size of your home, the number volunteers who are helping, and what tools you already own.
- The right personal protective equipment (also called "PPE"), properly fitted, is essential for protecting eyes, airways, skin, and clothes while cleaning up mold.
- Use wire brushes, not nylon, for scrubbing the wood framing. Wire brushes penetrate beneath the surface of the wood to more effectively remove mold.
- If you have access to them, fans, HEPA air-scrubbers, and dehumidifiers can help accelerate the drying process and get you ready to rebuild even faster.
- After each work day:
 - Safely dispose of disposable equipment and clothing,
 - Clean reusable equipment and protective clothing according to the manufacturers' recommendations,
 - Wash regular work clothing separately from other clothing in hot water and detergent, and
 - Clean footwear.

Mold Remediation Supplies

WHY USING FUNGICIDE, NOT BLEACH, IS ESSENTIAL

Use an EPA-registered fungicide for mold remediation. Fungicides are cleaning agents specifically intended for killing mold and other fungi, both on AND below the surface of contaminated materials. Mold remediation formulas are also designed to help prevent future mold growth.

Common brands: Concrobium Mold Control, Fiberlock Shockwave / ~\$30-\$40 per gallon

Bleach is NOT effective for mold remediation because it cannot clean below the surface of porous or semi-porous materials like wood. Because it cannot kill mold roots, mold can and will regrow. The EPA and CDC do not recommend bleach for mold remediation.

WHAT TO WEAR WHEN CLEANING MOLDY AREAS¹



Protective coveralls & boots: Use disposable protective coveralls with a hood and foot covers to protect your hair, clothes, and footwear during cleanup, and to limit further spread of mold spores. Also wear waterproof work or rubber boots.

Common coveralls brand: Tyvek / ~\$6-\$8 per suit



Nonvented safety goggles: Wear nonvented safety goggles to protect eyes from dust and mold spores.

Common brands: 3M, Dewalt / ~\$4-\$10 each



Particulate respirator: Use a respirator mask with 100-level particulate ("P100") filters to protect you from breathing in dust and mold particulates. Choose the correct size, and adjust the top and back of the mask for a snug fit and tight seal.²

Common brand: 3M / Reusable Mask: ~\$5-\$30 each / Filters: ~\$8 per pair



Two kinds of gloves: Wear long (extending to middle of forearm), impermeable, disposable gloves to protect skin from cleaning agents and particulates. Select gloves made from natural rubber, nitrile, polyurethane, or PVC. Wear leather work gloves over disposable gloves to protect hands from abrasions.

Disposable gloves: ~\$8-\$10 per box of 100 / Leather work gloves: ~\$8-\$15 per pair

¹See CDC recommendations for mold cleanup and personal safety (<https://www.cdc.gov/disasters/mold/index.html>)

²Consult Occupational Safety and Health Administration (OSHA) fit testing requirements for respirators when used in an occupational setting (www.osha.gov)

SUPPLIES

Personal Protective Equipment

- Protective coveralls
- Nonvented safety goggles
- Respirator masks
- P100 filters
- Disposable gloves
- Leather work gloves

Cleaning Supplies

- EPA-registered fungicide
- Spray bottles
- Shop towels
- Household or dish detergent
- Antibacterial wipes
- Brooms & dustpans
- HEPA vacuum

Tools

- Wire cutters
- Hammers
- Demolition hand tools
- Utility blades
- Wire brushes
- Ladders

Other Supplies

- Moisture meter
- Roll of 6mm plastic
- Duct tape
- Stapler & staples
- Permanent markers
- Contractor trash bags
- Fans / air blowers / dehumidifiers

Quantities needed depend on size of job and number of volunteers

Cleanup Tips

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 water problems and dry out the area as soon as possible.
- Clean and dry completely all contaminated items that can be properly washed; remove and discard those that cannot.¹
 - Non-porous items can be washed with hot water and detergent.
 - Porous materials that cannot be washed and disinfected, like carpeting and upholstery, must be discarded.
 - Wet insulation and drywall must be removed (to at least a foot above the waterline) and discarded.
- Cleaning properly is essential. In addition to causing mold growth, flood waters can carry chemicals, sewage, and other contaminants into the home. For more information on flood cleanup, visit www.cdc.gov/disasters/floods/cleanupwater.html
- Work area should be thoroughly dry (below 20% moisture) before beginning remediation. Use a moisture meter to test framing.
- Do not paint or caulk moldy surfaces. Painting over is not a way to treat mold and is likely to peel. Properly clean and dry all surfaces before painting.

Mold Remediation Procedure

The purpose of this procedure is to:

- Kill mold caused by flooding
- Dry out materials holding enough moisture to facilitate mold growth
- Prevent new mold growth
- Increase household's quality of life and health



TIMELINE:
2 - 5 DAYS

STEP 1

Identify and address water source

Inspect exterior of house for cracks and penetrations that may be allowing water infiltration. The water source must be addressed before mold remediation work begins to ensure that mold does not have the opportunity to grow again.²

STEP 2

Isolate the work area

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

STEP 3

Wear respirators

Ensure respirators have been cleaned with antibacterial wipes and dried before use. Wear respirators at times in the work area until at least 24 hours following wire brushing and vacuuming.

STEP 4

Clear 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 subfloor.

STEP 5

Treat framing: scrub, spray, and wipe down

Use a wire brush to scrub all wood surfaces in multiple directions--up and down, side to side, circularly and diagonally.³

- This helps remove mold and open up wood fibers for fungicide penetration.
- Any volunteers not scrubbing can be folding shop towels into sixths to prep for wiping down.
- Use a permanent marker to mark an "X" on the stud once fully scrubbed to track work progress.

Apply fungicide to all wood marked with an "X" according to product instructions (when recommended, spray application is often easiest).

Wipe down sprayed areas with a shop towel.

- Flip towel to a different clean face each time it becomes dirty; once all towel faces have been used, discard and replace with a new, clean towel
- Do not re-use dirty towels or re-dip dirty towels into fungicide.
- When stud is wiped down on all sides, circle the "X" with permanent marker.

¹For more information, see:

- FEMA - Initial Restoration for Flooded Buildings (<https://www.fema.gov/media-library/assets/documents/9968?id=2633>)
- FEMA - Cleaning Flooded Buildings Fact Sheet (<https://www.fema.gov/media-library/assets/documents/31368>)

STEP 6

Vacuum all exposed surfaces three times

Once all framing has been treated (all studs marked with a circled "X"), vacuum all exposed surfaces three times with a HEPA (High-Efficiency Particulate Arresting) vacuum to remove dust, debris, and dead mold spores.

STEP 7

Dispose of mold-contaminated items

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

STEP 8

Dry out completely

Allow at least 48 hours to dry completely (below 17% moisture). Do this by opening up windows, and if available, using fans, air blowers, and dehumidifiers. When possible, turning up the heat to 90 degrees can also significantly reduce drying time (*before turning on your HVAC, have your system inspected to verify it is free of mold*).

²If during your inspection of the house, you find or suspect structural damage, utility hazards, or mold in your HVAC system, stop and contact a professional to inspect.

³If accessible, operate an air scrubber(s) with a HEPA filter during demolition and mold remediation. This equipment draws air out of the construction zone, capturing mold spores and preventing their further spread.

Verifying Completion

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

The water intrusion or moisture problem must be completely fixed.

No visible mold or moldy odors should be present. (*note that staining and cosmetic damage may remain even after successful mold removal*)

The site should show no signs of reoccurring water damage or mold growth when revisiting shortly after cleanup.

Framing must be completely dry; requirements can vary but below 17% moisture level is recommended. Verify using a moisture meter.

Inspection by a qualified professional is recommended at this stage to certify your remediation was successfully completed. Your state and/or insurer may require this. Any clearance inspections must happen BEFORE rebuilding begins.

HOW SOON CAN YOU REBUILD AFTER REMEDIATION?

Testing with moisture meter must show framing to be completely dry (below 17% moisture or regulation level for the area) first. If any clearance inspections by licensed assessors are required (check with your state and your insurance company on any applicable requirements first), this must also happen before rebuilding.

Once the framing has been assessed to meet moisture regulations, and any required clearance inspections passed and documented, you may begin the rebuilding process.

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 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, including step-by-step mold remediation videos and additional recovery guides, visit sbpusa.org/start-here

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