



Do-it-Yourself Tips for Flood Repair

Individuals working in an area following a disastrous flood will be exposed to many hazards. The water may contain sewage, pesticides and other waterborne organisms that can cause disease, as well as sharp objects and other debris. Caution should be used upon entering any flood-damaged structure.

Health & Safety

- Wear heavy rubber gloves; thick-soled boots, goggles, hard hat and an N95 dust mask. These are the minimum requirements for persons working in moldy or flood-contaminated houses.
- Change your work clothes before entering any clean areas in a house or building to avoid cross-contamination.
- Wash work clothes separately from your regular laundry to avoid any cross-contamination.
- Drink plenty of fluids to stay hydrated. Rest frequently to avoid overheating and exertion.
- Wash your hands and face frequently using an anti-microbial soap if available. Keep your fingers away from your eyes, nose and mouth.
- Have a first-aid kit handy. Treat cuts and abrasions immediately with an antibiotic ointment.
- Confirm that the water is clean and safe. If there is a boil-water advisory, make sure to boil water for washing for at least one minute or add 1 teaspoon of household bleach per gallon of water and let stand for 30 minutes.
- Children, pregnant women, and people with health problems should avoid the flooded area until cleanup is complete.
- Only use electrical equipment in dry environments to avoid the risk of electrical shock.

Inspection & Initial Steps

- Enter the house only during daylight hours. Do not use candles or gas lanterns.
- Leave the house immediately if there is an odor of gas or any suggestion of instability in the structure. Notify authorities and wait for an authorized inspection before re-entering.
- If the power is off, turn the main electrical breaker off and tape it down to prevent it from accidentally turning on when the power is restored.
- If you have fuel oil or propane, turn off the fuel valve at the tank. Turn off natural gas at the meter.
- See **Health and Safety**, above, for minimum personal protection requirements.

Phase 1 – Preparation

- Support or drain sagging ceilings. (*Punch drainage holes around the edge first, then gradually work towards the lowest section.*)
- Remove raised floor tiles and other tripping hazards.
- Remove wall-mounted mirrors and heavy pictures before they fall from weakened drywall.
- Go room-by-room and make a list of all furnishings and personal property. Document the contents and damage with photographs.
- Before starting demolition, seal off any areas that escaped damage by stapling or taping plastic sheeting (available at home improvement stores) over all openings to limit the spread of airborne contaminants.
Note: *Areas that appear to have been unaffected by rain or flood waters may still have mold growing within wall and ceiling cavities. On walls and ceilings that show evidence or are suspected of having been wet, cutting small holes (approx. 6"x6") will allow inspection of the wall backing and interior for mold growth or other damage.*

- To prevent the foundation from collapsing, do not pump out flooded basements until the water outside of the building has subsided. Pump out 2-3 feet and check the following day. If the level has risen, it's too early to drain the basement.
- Get fresh air moving throughout the house. Open doors, windows, closets and cabinets.

Phase 2 – Contents

- Remove all contents from areas that were under water and hose down.
- Double bag and discard all food items and get them off site as quickly as possible.
- Discard rugs, mattresses, pillows, upholstered furniture and other porous materials that have been affected by water.
- Organic materials such as leather, animal trophies and furs are not restorable.
- Washable garments, towels and linens can be laundered in hot water and detergent. Items with visible mold are not restorable.
- Discard refrigerators and other appliances that contain internal insulation.
- Hard items such as metal, glass, china and finished wood may be decontaminated and restored.
- Guns and uncoated metals are subject to rust, and should be coated with rust preventive or moisture-displacing oil until full restoration can be performed.
- Wash CDs, DVDs and computer disks with clear water and allow to air dry. Video cassettes and players are not restorable.
- Computers may be washed with clear water and blow dried. However, regular water may also cause damage to undamaged components. Remove the hard drive and spray with moisture displacing oil, letting it dry completely before reinstalling into the computer and turning it on.
- Documents and photographs should be stored flat and allowed to dry. Photocopying is the most cost-effective way to preserve deeds and other important papers.
- Damaged antiques and valuable artworks cannot be evaluated immediately. Dry and clean only as necessary to preserve them for a future evaluation by an art restorer or appraiser. Appraisal information is available from the American Society of Appraisers, asainfo@appraisers.org.
- Continue to list and photograph damaged contents during removal. (Consider carrying a small notepad to jot down other items as they come to mind later.)

Phase 3 – Demolition and Decontamination

Demolition

- If weather permits, open windows for air circulation and drying.
- Remove plumbing fixtures for possible decontamination and re-use.
- Slice saturated carpets into small strips, roll up and carry out in double plastic bags.
- If electrical power and equipment are available, vacuum all contaminated or moldy surfaces with a HEPA vacuum. Remove shoe moldings, baseboards, door & window trim, drywall, paneling and insulation to at least two feet above the high water mark.
- If there is mold on the back of the drywall, extend demolition until all moldy materials have been removed.
- Remove finished flooring to permit drying and decontamination of the sub-floor.
- Moldy structural framing may remain in place for cleaning and decontamination.
- Bag moldy materials in double plastic bags before removing them from the demolition area.
- Open all water-impacted wall and ceiling cavities for drying.

Decontamination

- Hose down mud and silt, mop or squeegee dry.
- Clean moldy surfaces with a HEPA-vacuum, if available.

- Wash all affected surfaces with a combination cleaner-disinfectant if available, or with household detergent and water, using a scrub brush or scraper for stubborn stains.
- Saturate contaminated surfaces with a disinfectant cleaner or bleach solution (1 part bleach to 9 parts water) and keep wet for at least 10 minutes. (**Caution: do not use bleach with ammonia or ammoniated detergents!**)
- Remove insulation from saturated crawl spaces. After drying, remove existing plastic sheeting and replace with new material.
- Allow all surfaces to dry completely before installing new insulation or drywall. Drying the structure will take a minimum of two weeks and possibly longer.
- HEPA-vacuum all surfaces in unaffected areas and re-seal with plastic during repairs. See *Phase 1* note above for checking hidden areas.

Phase 4 – Final Clearance

- If possible, before rebuilding, obtain an inspection and evaluation by a Professional experienced in the treatment of mold and bacterial contamination. You can find one by contacting the American Industrial Hygiene Association at www.aiha.org.
- For additional information check the Restoration Industry Association website at www.restorationindustry.org.
- Additional information is also available from the American Red Cross (www.redcross.org), the Environmental Protection Agency (www.epa.gov/iaq/molds) and FEMA (www.fema.gov).

Useful Terms

Cross-contamination – transferring bacteria or mold spores from an affected area to an unaffected (clean) area

Decontamination – removing contamination by cleaning and killing germs, bacteria and other microbial contamination and applying biocides

HEPA vacuum – a vacuum equipped with a High Efficiency Particulate Arresting filter, capable of capturing up to 99% of extremely fine particles, such as mold spores

Hygienist – an expert in the science of health and the practices that protect it

Moisture displacing oil – a rust preventive oil spray (such as WD-40) available in building supply and home improvement stores

The Restoration Industry Association (formerly ASCR) is the only international, professional trade association for the cleaning and restoration industry. Its national and international member firms specialize in cleaning, treating and repairing damaged buildings and their contents. RIA sponsors education, training and certification programs. For more information phone (800) 272-7012 or visit www.restorationindustry.org.

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