

For Homes, Businesses, Schools & More...

After the flood waters recede and the clean-up has been done, most folks want to get back into their homes or businesses and start rebuilding. The problem is that wood that has been submerged in water has likely absorbed a large amount of water. Rebuilding too quickly after a flood can cause continuing problems such as mold growth, insect infestations, and deterioration of the wood and wall coverings.

Flood waters are not clean water; therefore, most porous building materials must be removed and replaced with new materials.

Caution!

- Inspect for structural and electrical damage from outside to determine if it is safe to enter.
- Electrical safety is extremely important in floods. Check for fire hazards and gas leaks. Use battery-powered light sources.
- Never mix chlorine bleach with ammonia or vinegar.
- Wear sturdy shoes, rubber gloves, and eye protection.
- Be watchful for fire ants, snakes, or other animals.
- If mold is present, wear a respirator that can filter spores.

First Steps

Make sure that everyone is out of danger of new flood crests, fire, and falling buildings. Assume flood water and flooded materials are contaminated.

1. Flood Insurance Claims

If you have [flood insurance](#), contact your insurance adjuster immediately.

- Begin cleanup, salvage, and drying as soon as possible. Do not wait for adjuster. Take photos for use as an inventory. All steps suggested on this page can be taken before an adjuster arrives.
- Clean house so the adjuster can see the damage.
- Keep damaged materials for proof of loss.
- Leave a phone number where you can be reached when the adjuster arrives.
- The adjuster will assess damages to the house. The owner should sign a proof of loss statement. Additional damage can be added when found.
- Contact governmental offices for information.
- If you do not have flood insurance, your homeowner's insurance likely will not cover the loss. If the flood has been [declared a federal disaster by the President](#), apply for assistance online at <http://www.DisasterAssistance.gov> or by calling 1-800-621-FEMA(3362) or 1-800-462-7585 (TTY) for the hearing and speech impaired.

2. Electrical Systems

Be sure all electric and gas services are turned off before entering the premises for the first time.

3. Food and Water Sanitation

Until your local water company, utility, or public health department declares your water source safe, purify your water, not only for drinking and cooking, but also for washing any part of the body or dishes.

- **Water:** Strain water through a clean cloth or filter; then boil water vigorously for a full minute; let cool. If boiling is not possible, use fresh unscented liquid chlorine bleach (8 drops or 1/8 tsp/gallon of clear water; 16 drops or 1/4 tsp/gallon of cloudy water); stir; let stand 30 minutes. Iodine and purification tablets are not recommended.
- **Food:** Undamaged, commercially-prepared foods in all-metal cans or retort pouches can be saved if you remove the labels, thoroughly wash the cans, rinse them, and then disinfect them with a sanitizing solution consisting of 1 tablespoon of bleach per gallon of potable water. Finally, re-label containers that had the labels removed, including the expiration date, with a marker.
- **Utensils:** Discard flood-contaminated wooden cutting boards and spoons, plastic utensils, baby bottles, nipples, and pacifiers. Thoroughly wash metal and ceramic pans, utensils, and dishes with hot soapy water and sanitize by boiling them in clean water or by immersing them for 15 minutes in a solution of 1 tsp chlorine bleach/quart water.

4. Furnishings and Carpets

Remove all furniture, bedding, and carpeting to outdoors to be cleaned and dried (or discarded).

- Flooded carpets and rugs are best replaced since flood water may contain contaminants. Flooded carpet pads should always be discarded and replaced.
- Remove water-logged rugs, carpets, and pads within 48 hours after flooding subsides.
- If salvage is attempted, spread out rugs and carpets outdoors. Hose off. If soiled, professionally clean or work in carpet shampoo with a broom. Rinse well with a solution of 1 gallon water and 2 tablespoons liquid household chlorine bleach to sanitize (if colorfast). If carpet is wool, do not add bleach.
- Dry the carpet and subfloor thoroughly as quickly as possible. If carpet is installed damp, it can mildew.
- Carpet might shrink, but a professional may be able to stretch it.
- All upholstered furniture and mattresses contaminated by flood water should be discarded. If an upholstered furniture piece is valuable, the stuffing and upholstery will need to be replaced. Solid wood, metal and plastic furniture may be cleaned and restored. Hose off any mud, clean, sanitize and let dry completely out of direct sunlight.

5. Walls

Open flooded walls, even if they appear undamaged, to prevent mold, odor, and structural decay later.

- Remove water from the structure as rapidly as possible. Ventilate.
- Remove baseboards, and cut holes in wallboard to drain uninsulated walls.
- Remove the interior surface of insulated walls to a point above water height. Discard flooded drywall.
- Undamaged paneling may be propped open or reinstalled after cleaning.
- Remove and discard all wet fibrous insulation.
- Clean out mud. Wall studs and plates may be sprayed with disinfectant (1 cup bleach/gallon water) to kill any existing mold and fungi.
- Speed dry with dehumidifiers and fans.
- Leave walls open until they have thoroughly dried, which may take up to a month.
- Select replacement materials that will withstand future floods (such as rigid foam insulation, removable wainscoting, ceramic tile, etc.).

Next Steps

Long-term flooding or wetness is likely to ruin most interior finishes and contents, but the next steps may be possible when flooding is short term and cleanup begins promptly. **Delay permanent repairs until the building is thoroughly dry, which may take weeks.**

1. Subfloors

- Layers of submerged plywood or OSB subfloors will likely separate or swell. Affected sections must be replaced to keep the new floor covering from buckling.
- When floor coverings are removed, allow the subflooring to dry thoroughly, which may take months without a dehumidifier.
- Check for warping before installing new flooring.

2. Wood Floors

- Carefully remove a board every few feet to reduce buckling caused by swelling. If boards are tongue-and-grooved, consult a carpenter or flooring professional.
- Clean and dry the floor thoroughly, which may take weeks, before replacing boards and attempting repairs.

3. Tile and Sheet Flooring

- If a submerged wood subfloor swells or separates, flooring will need to be removed. (Asbestos tiles should be removed only by a trained professional.)
- If the subflooring is concrete, removal of the floor covering will hasten drying of the slab, but it might not be necessary if it would ruin an otherwise unharmed material.
- If water has seeped under loose sections of sheet flooring, remove the entire sheet. Ease of flooring removal depends on the type of material and adhesive. Contact a

reputable dealer to find out what product and technique (if any) will loosen the adhesive.

4. Cleaning Wall Finishes, Woodwork, & Floors

To reduce mold and damage, clean and dry as soon as flood waters recede. **Do not sand or scrape lead-based paint.** Get more information before disturbing old paint. If materials are already moldy before you can begin cleanup, get more information on avoiding mold hazards and recommended removal methods from <http://www.epa.gov/mold> recovery publications.

- Use a phosphate-free, all-purpose, or disinfecting cleaner. Wash from top to bottom. Rinse with clean water.
- One-half cup of household chlorine bleach to a gallon of water can be used on nonmetallic, colorfast surfaces as a disinfectant (to kill surface mold and bacteria) after cleaning, but it will not prevent new mold growth on materials that stay damp.
- Dry thoroughly and quickly. If the utilities are on, use the air conditioning or heater, fans, and a dehumidifier or desiccants to speed drying.

5. Appliances and Equipment

Download and carefully review the publication, "[Evaluating Water-Damaged Electrical Equipment](#)," by NEMA.org.

6. Furniture

Take furniture outdoors to clean.

- Brush off mud. All parts (drawers, doors, etc.) should be removed. Remove or cut a hole in the back to push out stuck drawers and doors. Discard flooded padding.
- Use commercial furniture-cleaning products designed for the type of material. Do not refinish or wax until thoroughly dry.
- Dry slowly out of direct sunlight because sun will warp furniture. It may take several weeks to several months to dry.

7. Preventing Mold

Aggressively control mold in the weeks and months after the flood.

- When power is available, continuously use air conditioning (or heat in winter) plus a dehumidifier, if possible, to remove humidity.
- In an unair-conditioned home, open windows and use fans to circulate air.
- Turn on electric lights in closets, and leave doors open to facilitate drying.
- Try to reduce activities that add moisture to the indoor air, and use exhaust fans when cooking and bathing.

8. Removing Mildew from Household Articles and Upholstery

Avoid disturbing and spreading mold spores indoors. Clean mildewed items outdoors.

Learn and take precautions to minimize exposure to mold. Visit <http://www.epa.gov/iaq>.

- Use a HEPA vacuum, if available, to remove visible mold growth. Discard the vacuum bag. Otherwise, wipe with damp paper towels, discard, and seal in plastic bags.
- Dry items in the sun, if possible.
- Sponge any remaining mildew with thick suds or a commercial cleaner designed for the type of material.
- Wipe with a clean, barely damp cloth.
- Wipe mildew-stained areas with a cloth dampened with diluted alcohol (1 cup rubbing or denatured alcohol to 1 cup water). Dry thoroughly.