

Tornado Resources

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- Salvaging Food After a Tornado
- Electrical Systems and Appliances
- Flood-Damage Furniture and Appliances
- Cleaning Flood-Soiled Clothing and Bedding
- Disinfecting Dishes, Cookware and Utensils
- Cleaning and Repairing Flooded Basements

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- Cleaning Flood-Soiled Clothing and Bedding
- Disinfecting Cookware and Utensils

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*Your county
extension office*



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Lincoln County

Assessing Roof Damage After a Tornado

REPAIR STRATEGIES FOR HOMEOWNERS

If your roof has suffered structural damage from a tornado, make family safety your first priority. In some cases, such as a partially collapsed roof, you may need to relocate until repairs are made. Next, report damage to your insurance company. If you must make temporary repairs before an insurance adjuster's visit, take photographs or make a videotape of damage. You will need good records for insurance claims, applications for disaster assistance and income tax deductions.

WORKING WITH YOUR INSURANCE COMPANY

Call your insurance agent about the damage to your home and roof so that your agent can file a claim. The sooner you talk to your agent, the sooner your claim will be filed and an adjuster will inspect your damage. The amount of coverage for your loss depends on your policy. But even if you don't have full coverage, your agent may be able to give you advice on where to get help with repairs.

Because some damage may not be discovered until repairs are underway, don't be in a hurry to settle your insurance claim. Instead, keep your insurance agent apprised of repair estimates and repairs; have your building contractor or roofer discuss repairs and estimates with your agent if possible. Only settle your claim when you feel all repairs are known and/or made. That way, if related problems such as water damage, foundation damage or the need for new wiring are uncovered during reconstruction, your insurance settlement may reflect these as well. (See the fact sheet "Insurance Coverage and Making a Claim.")

TEMPORARY REPAIRS

If temporary repairs are needed before the professionals arrive, be sure that only a physically able person is allowed on the roof. Unsteadiness on the ladder or roof can lead to severe injuries. If the roof is sagging from structural damage, wait for a professional to assess damage and make repairs; a sagging roof may unexpectedly collapse.

Cover holes in the roof, walls or windows with boards, tarps or plastic sheeting. If possible, place tarps or plastic over the ridge so rain rolls off. Nail down plastic sheets or trash bags with strips of wood and secure them with duct tape. If the holes are large, you may need to support the plastic in the center to keep it from ripping from the weight of the rain.

If sections of the roof or floors are sagging, have a contractor or other knowledgeable person brace weak areas. Improper bracing may increase damage and the chance of injury, so do not attempt this work unless you are experienced in structural repairs.

PERMANENT REPAIRS

If damage is limited to non-structural elements such as shingles, flashing and sheathing, contact a professional roofer for the work. If damage is structural in nature, hire a general contractor. (See the fact sheet, "Hiring

a Contractor After a Disaster.”) A general contractor can replace the entire roof structure or portions of the roof as necessary, in addition to handling related repairs. If the contractor does not have roofing expertise (e.g. shingles, sheathing, etc.), he may subcontract this portion of the work to a specialist.

Additional resources:

Your family living agent, your local emergency government office, the American Red Cross, the Federal Emergency Management Agency

Assessing and Repairing Leaky Roofs

SAFELY FIXING A WATERY PROBLEM

You may be anxious to stop a roof from leaking, but don't risk serious injury trying to inspect or repair it. First, try binoculars for a closer view. Next, check the attic for a drip trail. Leaks are rarely located directly above the water spot on the ceiling. When you find a leak in the attic, push a nail, straw or wire through it to help you or a repair person locate it outside.

If rain continues to be a problem and a repair person is unavailable, follow the directions at right for temporary relief. But be sure that only a physically able person gets on the roof for these emergency measures. Unsteadiness on the ladder or roof can lead to severe injuries.

Additional resources:

Your county family living agent, your local emergency government office, the American Red Cross, the Federal Emergency Management Agency

Related publications:

"Repairing Your Flooded Home," American Red Cross/Federal Emergency Management Agency, 1992.

TEMPORARY REPAIRS

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CAUSES OF LEAKS

Storm and wind damage are responsible for some roof problems. Others are caused by defective materials, faulty construction or gradual deterioration. Here are some common causes of leaks:

- ◆ *Defective flashing.* Flashing is the sheet metal used in waterproofing roof valleys, hips and the angle between a chimney and a roof. Wet spots near a chimney or outside wall may mean the leak is caused by defective flashing, narrow flashing or loose mortar joints. Look for corroded, loose or displaced flashing on sloping roof valleys and at junctions of dormers and roof.
- ◆ *Clogged downspouts or eaves.* Check for choked downspouts. Accumulated water or snow on the roof above the flashing may cause a leak. Ice accumulations on eaves sometimes form ridges, which cause melting snow to back up under the shingles.
- ◆ *Cracks and deterioration.* Roofing (especially wood or composition shingles) usually deteriorates first on southern exposures. Check southern slopes for cracking or deterioration.
- ◆ *Holes.* Missing shingles or holes in the roofing may be causing wet spots. To find holes, check for a drip trail or spot of light coming through in the attic. Stick a nail, straw or wire through the hole to mark the spot on the outside.

REPAIRING LEAKS

Methods of repair will depend on the kind of roofing and the nature and extent of the leak. Unless you are experienced, hire a professional roofer for this work. Missing shingles should be replaced, holes repaired and cracks filled. Whatever method is used, avoid walking on patched sections.

Salvaging Food After a Tornado

FOOD SAFETY IN THE EYE OF A DISASTER

Damaged food supplies, water contamination and temporary loss of refrigeration may be critical issues for you as a tornado survivor. While structural damage may be the initial focus in your home, some basic precautions can keep your food stores safe and your family healthy as you begin clean-up efforts.

If you live in an area susceptible to tornadoes, keep an adequate supply of food, bottled water and emergency equipment on hand. This includes enough canned food to last four to five days, a hand can opener, battery-powered radio, extra batteries and emergency cooking equipment like a camp stove with fuel to operate it.

Additional resources:

Your county family living agent, your local emergency government office, the American Red Cross, the Federal Emergency Management Agency

Related publications:

UW-Extension Publications—

"Management of Food for Emergencies," (B3045);

"Quick Consumer Guide to Safe Food Handling," (BG248);

"When the Home Freezer Stops," (B2837);

"Keeping Food Safely," (B3474).

USE CAUTION WITH WATER AND FOOD SUPPLIES

The water supply may be disrupted or contaminated after an area has sustained a tornado. Food in damaged buildings and homes may be hazardous. Follow these precautions:

- ◆ Drink only approved or chlorinated water.
- ◆ Consider all water from wells, cisterns and other delivery systems in the disaster area unsafe until tested.
- ◆ Check foods and discard any containing particles of glass or slivers of other debris.
- ◆ Discard canned foods with broken seams.

REFRIGERATION AND FREEZER CONCERNS

If the electricity is off to the refrigerator or freezer, follow these guidelines:

- ◆ Discard refrigerated meats, seafood, milk, soft cheese, eggs, prepared foods and cookie doughs if they have been kept above 40 degrees F. for over two hours. Also discard thawed items that have warmed above 40 degrees F., with the exception of breads and plain cakes.
- ◆ Discard any refrigerated items that turn moldy or have an unusual odor or appearance.
- ◆ Refreeze partially or completely frozen foods.
- ◆ Cold but fully thawed, uncooked meat, fish or poultry should be checked for off-odor. If there is none, cook and eat or cook and refreeze.
- ◆ Discard combination dishes such as stews, casseroles and meat pies if they are thawed.
- ◆ Refreeze thawed (but cold) juices, baked goods, and dairy items such as cream, cheese and butter.
- ◆ Do not refreeze thawed vegetables unless ice crystals remain. Cook and use them if there are no off-odors.

Electrical Systems and Appliances

GENERAL CLEAN-UP AND WHAT TO DO BEFORE THE ELECTRICIAN ARRIVES

Restoring the electrical system and evaluating damage to appliances are high priorities after a flood. But before your electrical system is turned on, it should be thoroughly checked for short circuits by an electrician or other competent person. Ask your power supplier for advice and assistance.

Before entering your home after the flood, be sure that the electricity has been completely shut off. Appliances should not be operated until they have been thoroughly cleaned and reconditioned. Running equipment before it is properly cleaned could seriously damage it and may cause electrical shock.

ELECTRICAL CIRCUITS AND EQUIPMENT

Things to do before the electrician arrives:

- ◆ Have electricity shut off at both the meter and in the buildings. When touching switches, stand on a dry board and use a dry stick or rubber gloves to pull handles.
- ◆ Remove covers from all switches, convenience outlets, light outlets and junction boxes that have been under water.
- ◆ If a box is filled with mud, remove the screws that hold the receptacle or the switch in place. Pull receptacle, switch and wires out about two inches from box. Clean out all mud and dirt. Do not remove electrical connections. Leave boxes open for electrician.
- ◆ Remove all fuses and covers from entrance panel. Clean out all mud. Wires can be moved, but *do not disconnect*.

For some equipment, such as pumps, a temporary line can be installed by an electrician until the permanent wiring has a chance to dry.

ELECTRICAL APPLIANCES

Here are some general rules to follow:

- ◆ *Television sets and radios.* Professional cleaning is recommended for these types of appliances. There is a danger of shock because certain internal parts can store electricity even when the appliance is unplugged. Check the back for a warning label. Get a cost estimate before repairs to see if the appliance is worth saving.
- ◆ *Motorized appliances.* These include the washing machine, dryer, dishwasher and vacuum cleaner. Professional cleaning of the motor and other parts is recommended. However, you can clean the exterior surfaces in the meantime.
 - a) Use a heavy-duty cleaner and hot water to remove stains and silt deposits. Follow up with a rinse solution of 2 tablespoons chlorine bleach to each quart of water.
 - b) When removing gritty deposits, rinse your cloth in water frequently to avoid scratching enamel or metal surfaces.
 - c) Clean and disinfect dishwashers, washing machines and dryers only with water that has been declared safe to drink.

- ◆ *Refrigerators, freezers and ovens.* These appliances may have foam insulation and sealed components that suffer little water damage. But since they hold food, they should be cleaned, disinfected and checked by a professional or replaced. If replacement is recommended, get the opinion in writing and discuss it with your insurance adjuster before money is spent for a new appliance.
- ◆ *Heating appliances.* Disconnect hot water heaters and remove all panels and any flood-soaked insulation. Have an electrician or professional repair person clean and restore the unit to working order.
- ◆ *Lights and lamps.* Remove fixtures that were submerged. Clean outlet boxes, sockets and wiring. Floor or table lamps should be completely disassembled and cleaned. Damaged cords and plugs should be replaced. Consider taking lamps to an appliance shop unless you are familiar with these repairs.

GROUNDING

All metallic appliances that have been flooded should be properly grounded to prevent electric shock. Mud or dirt in a grounded outlet or adapter may prevent the grounding system from working, and you could be electrocuted. If you are unsure if your electrical system is properly grounded, call an electrician.

Additional resources:

Your county family living agent, your local emergency government office, the American Red Cross, the Federal Emergency Management Agency

Related publications:

"Repairing Your Flooded Home," the American Red Cross/Federal Emergency Management Agency, 1992.

Flood-Damaged Furniture and Appliances

DECIDING WHAT TO SALVAGE AND TIPS ON RECONDITIONING

Evaluating appliance damage is a high priority after a flood. Have a service person check flooded appliances before you attempt operation or invest a lot of time in clean-up.

Deciding which furniture to save may be a more personal issue, especially if you have antiques and other pieces with sentimental value. Keep in mind that you don't need to repair all pieces of salvageable furniture immediately. You can clean, dry and store them in a warm, well-ventilated place until you have time to deal with them.

APPLIANCES

Before entering a home after a flood, be sure that the electricity to the dwelling has been completely shut off. (See the fact sheet, "Electrical Systems and Appliances.") Appliances should not be operated until they have been checked by service personnel.

Here are some things that may need to be done:

- ◆ Electrical motors may need to be reconditioned or replaced.
- ◆ Wiring and fixtures need to be checked and cleaned. They may also need replacement.
- ◆ Before cleaning and sanitizing an appliance, be sure the motor is in safe working order. It may not be worth the time to clean up the unit.
- ◆ A rust inhibitor may need to be applied to all metal parts. Even though an appliance may not have been submerged, rust can develop from dampness in the air.

REFRIGERATORS AND FREEZERS

Sanitize the refrigerator or freezer if water has seeped in. Be sure the motor and freezing unit are in safe working order and insulation is not wet. Wet insulation means replacement may be necessary.

- ◆ Remove and wash all shelves, crispers and ice trays. Wash thoroughly with water and detergent. Rinse with a disinfectant solution.
- ◆ Wash the interior of the refrigerator, including the door and door gasket, with hot water and baking soda. Rinse with a disinfectant solution.
- ◆ Leave the door open for about 15 minutes to allow free air circulation.
- ◆ If odor remains, place several pieces of activated charcoal in an open metal container, or use a commercial refrigerator deodorizer.
- ◆ Wash the outside with a mild detergent and hot water.

LAUNDRY EQUIPMENT

After washers and dryers have been reconditioned, sanitize them as follows:

- ◆ Pour a disinfectant (chlorine, pine oil or phenolic) into the empty washing machine. Then complete a 15-minute cycle at the "hot" water setting.
- ◆ Unplug the dryer and wipe the drum and door with a cloth dipped in disinfectant solution. Rinse with a cloth dipped in clear water.
- ◆ Leave the dryer door open until all parts are thoroughly dry — preferably overnight.

FURNITURE

Before starting to salvage damaged furniture, decide which pieces are worth restoring. Such decisions should be based on: the extent of damage, cost of the article, sentimental value and cost of restoration. Antiques are probably worth the time, effort and expense of restoration. Unless damage is severe, you may be able to clean and refinish antiques at home.

- ◆ Don't try to force open swollen wooden doors and drawers. Instead, take off the back of the piece of furniture to let the air circulate. You probably will be able to open the drawers after they dry.
- ◆ Solid wood furniture can usually be restored, unless damage is severe. It probably will need to be cleaned, dried and reglued. Wood alcohol or turpentine applied with a cottonball may remove white mildew spots on wood. Cream wood restorers with lanolin will help restore good wooden furniture parts.
- ◆ Wood veneered furniture is usually not worth the cost and effort of repair, unless it is very valuable. If veneer is loose in just a few places, you may be able to glue it adequately.
- ◆ Upholstered furniture soaks up contaminants from floodwaters and should be cleaned only by a professional. Get a cost estimate to see if furniture is worth saving. Usually, flood-soaked upholstered pieces should be thrown away unless they are antiques or quite valuable.

Additional resources:

Your county family living agent, your local emergency government office, the American Red Cross, the Federal Emergency Management Agency

Related publications:

"Repairing Your Flooded Home,"
American Red Cross/Federal
Emergency Management Agency, 1992.

Cleaning Flood-Soiled Clothing and Bedding

WHAT TO SALVAGE AND HOW TO CLEAN IT

Unfortunately, cleaning your flood-soiled clothing and bedding is not the same as doing the usual family wash. Items need to be sanitized as you wash them. And your washing machine may be flood-damaged, making machine washing out of the question until you can get to a laundromat or friend's house. Nevertheless, you can help prevent mildew damage to clothes and bedding by sorting and drying items as soon as possible.

Even if your washing machine was not flooded, avoid using it until you know that the water is safe enough to drink and that your sewer line works. Before you wash clothes in the machine, run it through one full cycle. Be sure to use hot water and a disinfectant or sanitizer, such as chlorine bleach.

CLOTHING

When cleaning flood-damaged clothing:

- ◆ Separate wet items as soon as possible to keep clothing colors from running together. Sort out clothing that should be drycleaned.
- ◆ Take clothes and linens outdoors and shake out dried mud or dirt. Hose off extremely muddy items to avoid clogging your drain when you wash. If you don't have access to water, simply dry things out.
- ◆ If possible, soak badly soiled items overnight in cold water and detergent. Wring out and air dry if you're unable to machine wash right away.
- ◆ Check the labels on clothes and linens, and wash them in detergent and warm water if possible. Adding chlorine bleach to the wash cycle will remove most mildew and will sanitize the clothing. Because bleach fades some fabrics and damages others, use other sanitizers, such as pine oil cleaners, as necessary.
- ◆ If an item is still stained after washing, rewash before drying. Drying may make some stains more difficult to remove.
- ◆ Items to be drycleaned should be air-dried and taken to a cleaner as soon as possible.

Furs and leathers are usually worth the cost of professional cleaning. If you want to clean leather yourself, wash the mud off and dry the leather slowly. Keep it away from heat or sunlight while drying.

BEDDING

Bedding should be hung out to dry as soon as possible. Once dry, brush off excess soil and dirt. Pillows, while washable, usually should be discarded if soaked with contaminated floodwater.

- ◆ *Sheets and pillow cases.* Put sheets and pillow cases through two complete washing cycles. Use diluted liquid chlorine bleach to help kill germs. Follow your usual drying procedure.
- ◆ *Blankets.* Put washable blankets (acrylic, cotton) through two complete washing cycles. Air dry or use an automatic dryer at proper temperature settings. Put wool blankets through a drycleaning process either at a commercial coin-operated facility or drycleaning plant. Shrinkage and the difficulty of thorough cleaning make wool blankets troublesome to wash.
- ◆ *Quilts and comforters.* Wash or dryclean depending on fiber content of the bedding. Usually, it is best to wash cotton quilts.

MATTRESSES

As a general rule, inexpensive mattresses are not worth the expense of professional sanitizing and reconditioning. They should be discarded.

- ◆ In some cases, a good inner spring mattress may be worth the cost of reconditioning. Get an estimate from commercial facilities.
- ◆ If the outside of the mattress is only slightly damp, brush off surface soil and wipe with a cloth wrung out of a solution of one cup denatured or rubbing alcohol and one cup water.

Additional resources:

Your county family living agent, your local emergency government office, the American Red Cross, the Federal Emergency Management Agency

Related publications:

"Repairing Your Flooded Home,"
American Red Cross/Federal
Emergency Management Agency, 1992.

Disinfecting Dishes, Cookware and Utensils

SAFETY GUIDELINES AFTER A DISASTER

During a disaster such as a flood, tornado or fire, kitchen items easily can become contaminated. Floodwaters may contain silt, raw sewage, oil or chemical wastes, while fires may leave residues from toxic fumes or fire-fighting chemicals. Before using any item that has come in contact with these substances, follow the guidelines at right.

DISASSEMBLE, WASH AND DISINFECT

Take apart any item that can be cleaned in pieces. If possible, remove handles from pots. If you have a dishwasher and the hot water temperature is at least 140 degrees F., use a long wash cycle and heated drying cycle to clean and disinfect dishwasher-safe items. Regarding other items, or all items if you don't have a dishwasher, follow these steps:

- ◆ Wash all items in a strong detergent solution. Use a brush to remove dirt. Rinse in hot water.
- ◆ Immerse glass, porcelain, china, plastic dinnerware and enamelware for 10 minutes in a disinfecting solution of 2 tablespoons of chlorine bleach per gallon of hot water.
- ◆ Disinfect silverware, metal utensils, and pots and pans by boiling in water for 10 minutes. Chlorine bleach should not be used in this case because it reacts with many metals and causes them to darken.
- ◆ Air-dry dishes. Do not use a towel.
- ◆ Discard and replace soft, porous plastic or wood items saturated by floodwater, since they cannot be sanitized. These include baby bottles, nipples and pacifiers.
- ◆ If cupboards and counters come in contact with floodwater, clean and rinse them with a chlorine bleach solution before storing dishes.

Additional resources:

Your county family living agent, the American Red Cross, the Federal Emergency Management Agency

Related publications:

"Repairing Your Flooded Home,"
American Red Cross/Federal
Emergency Management Agency, 1992.

Cleaning and Repairing Flooded Basements

GETTING OUT WATER AND PREVENTING FUTURE PROBLEMS

Before you enter a flooded basement, take time to:

- 1) Turn off the electricity, preferably at the meter;**
- 2) Check outside cellar walls for possible cave-ins, evidence of structural damage or other hazards;**
- 3) Turn off gas or fuel service valves; and**
- 4) Open doors and windows or use blowers to force fresh air into the basement.**

PUMPING

For safety reasons, do not use an electric pump powered by your own electrical system. Instead, use a gas-powered pump or one connected to an outside line. Fire departments in some communities may help with pumping services.

More damage may be done by pumping flooded basements too soon or too quickly. Water in the basement helps brace the walls against the extra pressure of water-logged soil outside. If water is pumped out too soon, walls may be pushed in or floors pushed up. To help prevent this kind of structural damage:

Remove about a third of the water each day. Watch for signs of structural failing.

If the outside water level rises again after the day's pumping, start at the new water line.

Don't rush the pumping; the soil may be very slow to drain. Whatever is submerged in the basement will not be damaged further by delaying the pumping.

CLEANING

After water has been pumped from the basement, shovel out the mud and debris while it is still moist. Hose down walls to remove as much silt as possible before it dries. Floors and walls may need sanitizing, particularly if sewage has entered the basement. Scrub walls and floors with a disinfecting solution of 1 cup chlorine bleach per gallon of water.

Oil stains caused by overturned or damaged oil tanks also may be a problem following basement flooding. Commercial products, available from fuel-oil suppliers, will help neutralize fuel oil. The products come in powder form or an aerosol spray for hard-to-reach places. To remove oil stains and destroy odor: wipe up excess oil, shake or spray product on the spot according to manufacturer's directions, let it set, then sweep it up.

INSPECTION AND REPAIR

Before beginning repairs, make a thorough inspection of supporting columns, beams, walls and floors. Unless you have structural expertise, hire a contractor to make a professional survey. (Consider joining with neighbors for a group-rate inspection.) Repairs may extend to the following:

- ◆ *Buckled walls.* Signs of buckling include horizontal cracking and areas that have moved out of vertical alignment. When this condition is minor, you need not repair the wall immediately. However, any noticeably buckled wall will eventually collapse from normal ground pressures and seasonal temperature changes. When buckling has seriously weakened the wall, the damaged parts should be rebuilt immediately. Pilasters (vertical reinforcements) may need to be constructed into walls over 15 feet long.
- ◆ *Settled walls and footings* are indicated by vertical cracks either in small areas or throughout the structure. Repairs are difficult without special equipment. Contact a reliable contractor for this work.
- ◆ *Heaved floors* are those that have not returned to their original level or have cracked badly. The floor may have to be removed and a new floor constructed. If a floor is badly cracked, but has returned to its original level, a new floor may be placed over the old one. A vapor barrier should be added between the two floors. The new floor should be at least 2 inches thick.

In houses without basements, the area below the floor may be completely filled with mud. Shovel out the mud as soon as possible to avoid rotting joists or foundation wood.

Additional resources:

Your county family living agent, your local emergency government office, the American Red Cross, the Federal Emergency Management Agency

Related publications:

"Repairing Your Flooded Home," the American Red Cross/Federal Emergency