



# Cleaning the House After a Flood

After a flood, it is important to restore your home to good order as soon as possible in order to prevent further damage to building materials, and to prevent mould growth. Immediate action is important. Mould is less likely to grow if your house and furnishings are **dried within 48 hours**.

## PERSONAL PROTECTION EQUIPMENT

Flood waters may contain risks that can affect your health, including raw sewage and chemical contaminants. Items and surfaces that come into contact with flood waters can become contaminated. When working with flood water-contaminated material it is recommended that you protect yourself from these risks by using personal protection equipment.

Use appropriate personal protective equipment for all flood clean-up activities, including:

- Puncture-proof and water-proof boots, particularly if water is present in the house.
- Rubber gloves, as well as sturdy work gloves for cleaning and removing flood-damaged items.
- A tool, such as a shovel, to dislodge or move any debris. Avoid using your hands to recover submerged items.
- Face masks, including a N95 respirator mask (available at hardware stores), if cleaning areas that could contain mould, asbestos or heavy dust.
- A first aid kit (including supplies to clean and cover any cut or wound before commencing clean-up).

Remember to bathe or shower using soap and warm water when you finish any cleaning activities. Also be sure to wash your hands and any exposed skin regularly, using soap and warm water, during cleaning activities. Avoid touching any exposed skin with contaminated gloves or items. Wash your clothes.

## FOOD

Flood waters carry harmful germs from raw sewage, so the only safe flood-exposed foods are those sealed in metal cans. Any damaged or blown (bulged) cans should be discarded.

- Clean cans using warm water and soap. Scrub the rim and caps using a firm brush.
- Then, sanitize metal cans using a mild bleach solution (one tablespoon of bleach to four litres of water).
- Dry metal cans quickly to avoid rusting.
- You must dispose of the following if they have come into contact with flood waters:
  - all meats, fresh fruits and vegetables;
  - all boxed foods;
  - all products in jars, including home preserves, and all bottled drinks (the area under the seal of jars and bottles cannot be adequately disinfected);
  - all medicines, cosmetics and other toiletries.
- Discard the contents of your fridge if the power was off for more than 12 hours, or if contacted by flood waters.
- Discard the contents of your freezer if the power was off for more than 48 hours, or if contacted by flood waters.
- **If in doubt, throw it out.**

## **FLOORS**

Floors are badly soiled during a flood. To clean and sanitize floors, you must:

- Move furniture and all removable floor coverings outdoors.
- Remove wet carpets and wet carpet underlay as soon as possible, so that the floor does not start to distort or delaminate.
- Drag carpets out on a plastic sheet instead of carrying them. Carrying wet carpets may harm your back.
- Clean floor using warm water and soap. Then, sanitize all surfaces using a mild bleach solution (one tablespoon unscented household bleach to four litres water). Dry floors completely.
- Clean all floors in a flooded house, even those that are on floors above the water line, since they will have been exposed to excessive humidity for long enough to start mould growth.

### ***Carpets***

- Remove and discard flooded carpets and carpet underpads. You may need to dry the carpets slightly so they can be dragged out. Carpet underpads may fall apart while being removed. Be sure to remove all remaining bits.
- To save expensive carpets and/or area rugs, you will need to send to professional cleaners. Contact a cleaning company quickly to reduce damage to these carpets.

### ***Vinyl, Linoleum and Other Sheet Floor Coverings***

Vinyl, linoleum and other floor coverings can trap dirt and water which can cause further damage.

Remove the flooring to ensure rapid drying if:

- The wooden subfloor underneath is wet.
- Dirt and water is trapped underneath the flooring.

### ***Inside Floor Cavities***

The space between the floor and ceiling should be inspected to see if the cavities have become wet.

Soon after the main floodwater is removed:

- Whenever wet material is found in these cavities, open the cavities to allow cleaning and drying.
- Remove and discard any wet insulation, clean and then sanitize the surfaces.
- If wood structural members have become saturated, it may take days or weeks for them to dry completely, before the cavity can be closed again.

## **WALLS**

Before starting any remediation or construction work on walls, be sure you know which are load-bearing, and consult a contractor for guidance on structural safety.

- Remove drywall that has been soaked or absorbed water.
- Clean remaining drywall using warm water and soap. Then, sanitize using a mild bleach solution (one tablespoon unscented household bleach to four litres of water). Dry walls completely.
- Clean all walls in a flooded house, even those that are on floors above the water line, since they will have been exposed to excessive humidity for long enough to start mould growth.

### ***Inside Wall Cavities***

- Whenever wet material is found in these cavities, open the cavities to allow cleaning and drying.
- Remove and discard any wet insulation, clean and then sanitize the surfaces.
- If wood structural components are saturated, it may take days or weeks for them to dry completely, before the cavity can be closed again.
- Consider using de-humidifiers to speed up drying of structural components.

The more quickly hidden spaces are opened, the less water saturation will take place and the quicker materials can be dried to safe levels.

### ***Wet Insulation***

Fibrous insulation, like glass fibre, mineral wool and cellulose insulation materials, even those not wetted in the flood should be removed.

- They collect contamination even without being wetted in a flood.
- Large amounts of contamination remain after material is dry.
- If they stay wet for extended periods of time, moulds and other microbes can grow.
- They lose their insulation capabilities, even after drying.

Board insulation, such as styrofoam and urethane, can also become saturated. Insulation materials will continue to absorb water up above the high-water mark. That rising damp region can reach half a metre (1 to 2 feet) in a few days under some conditions.

For these reasons,

- Remove all fibrous insulation above the obvious high-water mark and replace it with new material once the cavity materials dry sufficiently.
- Remove board insulation that is saturated.

### **CEILINGS**

Ceilings above the high-water mark may be reasonably dry and undamaged, but they still require checking and cleaning. Moisture can be absorbed upward along walls and wet ceiling materials.

Replace ceiling drywall or plaster that was submerged in flood waters.

Check ceiling materials above the high water mark to sure they are dry. If they are wet, replace them. Clean remaining ceilings using warm water and soap. Then, sanitize using a mild bleach solution (one tablespoon unscented household bleach to four litres of water). Dry surfaces completely.

### **ELECTRICAL EQUIPMENT, LIGHTS, FIXTURES, AND WIRING**

Do not use flooded electrical equipment (such as outlets and switch boxes or fuse/breaker panels) until they have been inspected and passed by the electrical utility or an electrician approved by the utility.

**They are not safe when they are wet and dirty!** Wet dirt is an excellent conductor of electricity and could either short out the power or leave some surfaces electrically “live” and dangerous to touch.

#### ***Electrical Outlets and Switchboxes***

When the power is off:

- Clean electrical outlet and switch boxes using a small amount of warm water and soap.
- **Be sure that all electrical supply materials and equipment are perfectly clean and dry before power is turned on again.**

### ***Lighting Fixtures***

Once the power is off, or after you have disconnected and removed your light fixtures

- Take ceiling fixtures and lamps apart to check for dirt and wetness.
- Clean and dry thoroughly before use.
- Expect some burnt-out bulbs and cracked or broken bulb glass. Good bulbs may shatter the first time they are turned on, so get a shade between you and the bulb for that first trial.

## **APPLIANCES**

### ***Large Appliances***

- Do not use larger appliances, like washing machines, dryers, fridges, and freezers that were submerged in flood waters. Dirt in motors and switches can cause severe damage and electrical shock.
- Contact a repair company to have these appliances inspected and repaired before use.
- Repair the washer and dryer first, as you could then use them to salvage clothes.

### ***Small Appliances***

It may be best to replace flooded small appliances. Old equipment may cost more to repair than to buy new equipment. If you decide to save any small appliances:

- Get an estimate of the possible repair costs.
- Rinse and clean small appliances with warm water and detergent. Send them to a repair shop.

## **FURNACES AND WATER HEATERS**

- Do not use flooded furnaces and water heaters until they have been inspected and serviced by a trained repair person.
- Flood and sewage waters contain harmful microorganisms that can grow on surfaces inside your heating and ventilation ((HVAC) systems, even in ducting that was not submerged in water.
- The professional hired should:
  - Isolate sections of HVAC systems that are being cleaned using plastic sheeting or other vapour barriers.
  - Replace all flood damaged materials, like insulation and filters.
  - Vacuum, clean and sanitize all surfaces, including air ducts. All components must be dried as quickly as possible.
  - Test that the HVAC system is operating properly.

## **PLUMBING**

During a flood, water may well up through flood drains and sump pits, bringing materials into the house that should never be there. As the water subsides, indoor materials may be sucked or washed into drainage systems and partly block them or just sit there and rot.

- If you have a private sewage disposal system, make sure it is functional before using fixtures or flushing plumbing lines.
- Remove debris from floor drains, fixtures, and sump pits, then flush and disinfect.
- Flush all plumbing lines in your house, including any water treatment devices.
- Scrub away any greasy dirt and grime off surfaces.
- Check for priming of the floor drains, meaning water stays in these drains, so that sewer gasses

cannot move up into the house when the drains dry out.

- If you do not have a flush line installed, be sure to check the drains regularly, pouring some water and chlorine bleach into them to keep them primed and disinfected.

The footing drains outside your foundations may have seen more water and dirt than they could cope with during the flood.

- Have them checked out by a person trained in plumbing and drains. They can often be cleaned out through special clean-out pipes, or from the connection to the storm sewer.
- If they cannot, you should be ready for problems in the spring or very rainy periods, when they will not drain as well and may allow water to enter your basement. Keep stored materials away from basement walls and off basement floors. This will reduce future damage, but remain alert for problems.

### **WHAT TO DISCARD**

Many materials cannot be reasonably cleaned and dried once they have been soaked with floodwater. Remove and discard the following items, in sealed plastic bags, whenever possible.

- Inexpensive possessions that have been soaked.
- Particleboard (fibreboard) furniture.
- Inexpensive plush furniture, Furniture may be difficult or almost impossible to clean if it is upholstered or if sewage and other organic materials are involved.
- Magazines and books. Mattresses and box springs.
- Fluffy bedding (such as duvets, comforters and pillows), unless they can be laundered in hot water and dried in a hot dryer.
- Electrical equipment that has been inundated and water-filled.
- Well-worn clothes may not warrant the time and effort to salvage.
- Papers and paper products that are not valuable.
- Paper that was wet for days.

### **WHAT TO SAVE**

Assess items that might be safe to salvage and repair, including:

- Surfaces that do not absorb water
- Fabrics that can be laundered and bleached
- Surfaces not affected by the flood water, such as items in the upper floors of your home.

#### ***Furniture***

- Antique furniture may warrant the expensive treatment that is required to repair flood water damage. Contact professional restorers quickly and follow their instructions precisely
- Salvage good quality wood furniture and particleboard furniture if dunking was short and no swelling is apparent. Clean furniture using warm water and soap. Then, sanitize using a mild bleach solution (one tablespoon unscented household bleach to four litres of water). Dry quickly, but not in the sun or with direct heat. Open drawers to speed drying, but not to fully disassemble them, because of possible distortion.

### ***Linens, Bedding and Clothing***

Salvage flood-damaged fabrics that can be laundered.

- Scrape off heavy dirt. Rinse.
- Wash fabrics in hot water. Dry in a hot dryer.
- Send non-washable fabrics such as silks and woolens professional dry cleaners.

### ***Paper and Paper Goods***

To salvage important papers, such as legal, financial or sentiments documents:

- Remove most water from the paper by blotting with blank paper or thin blotting materials. Some recommend using a light sprinkle of baking soda to help change surface chemistry and deter mould growth. However, any such chemical makes it possible that the inks will be affected, and that the chemistry of the paper will change. Test a spot to see if there are any dramatic effects before you use a chemical generally on your valuable paper goods.
- Open books to the breeze and the sun to speed drying. Remember to close and press them at night, or more often if wrinkling starts to appear. Too rapid drying may be hard on bindings, so be cautious about drying them in full sun.
- Wrap and freeze wet paper goods if you cannot begin drying them within a day.
  - Rinse off as much of the dirt as possible and towel dry by blotting, not rubbing.
  - Wrap materials carefully in freezer bags and clean off the outside of the bags before freezing. Because of the high risk of contamination, never mix these bags with food bags. When a freezer can be used only for wet papers, it may be best to leave items unwrapped or lightly wrapped, as they will dry slightly during storage. This technique is used, in combination with a vacuum, to remove water from extremely valuable documents.
  - Later, remove items one or two at a time and carefully thaw and dry.
  - Once dried, clean with warm water and soap. Then, sanitize using a mild bleach solution.

If it becomes clear that mould damage has occurred or that distortion is going to be severe, focus on saving the information, not the paper.

- Check with a lawyer to determine if any notarized copies of your documents are available.
- Check with local government offices to determine if birth records, passports, and other government certificate-type documents, can be replaced.
- Certain large documents can be substantially preserved if pressed through hot rollers at a copy house that makes blueprints. This could be worthwhile for maps or other large documents that are worth keeping for sentimental or historical reasons. The cost may not be as high as you thought, but the paper will have to be roll pressed before it has dried, so act quickly.

For more information, contact your local Environmental Public Health Officer or your local Health Centre.

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