



Cleaning Up After the Flood

What Can Happen When Areas Are Flooded

When interior surfaces get flooded with water, damage to surfaces and building contents is a given. But what can be done in attempt to preserve or recover interior surfaces that have been submerged in water? Read on to learn about basic guidelines involved in flood restoration.

Potable water (clean water) flooding: That is the result of plumbing failures, overflowing toilets, intentional vandalism, etc. that results in areas being flooded with water that has been chlorinated or other wise treated to remove bacteria making it suitable for drinking. Recovery efforts must be initiated within 48 hours.*

Natural Disaster-Contaminated Flooding: Flood waters can contain sewage or other biological contaminants. Even if sewage is not part of the mix, flood waters pick up organic debris along the way to causing damage making it a messier clean up and a situation that can result in the rapid breeding of harmful bacteria. In these cases, remedial specialists maybe required. Read on for more guidance.

Mold Growth: Surfaces that remain wet for 48+ hours are at risk for mold growth.

*Note: If mold growth has occurred or materials have been wet for more than 48 hours, consult Table 2 guidelines. Even if materials are dried within 48 hours, mold growth may have occurred. Items may be tested by professionals if there is doubt. Note that mold growth will not always occur after 48 hours; this is only a guideline.

Warning: Consumption or contact with sewage contaminated water can cause a variety of serious diarrheal illnesses. If you suspect flood water is contaminated, please consult a remediation expert.

General Rules On Flood Clean-Up

Safety First: Assume the water is contaminated with sewage and can be dangerous.

Remove and Discard: Any soft or absorbent materials that cannot be washed and disinfected (such as, mattresses, carpeting*, carpet padding, rugs, upholstered furniture, cosmetics, stuffed animals, baby toys, pillows, foam-rubber items, books, wall coverings, and most paper products).

Remove and discard: Drywall and insulation that has been contaminated with sewage or flood waters.

Clean and Disinfect Hard Non-Porous Surfaces: Use the 2-step Method below.

1. **Pre-Clean all surfaces using a disinfectant or a general purpose cleaner.**
2. **Disinfect:** Apply a disinfectant to pre-cleaned surfaces, leave visible wet and allow to air dry. Important: Do not rinse or wipe surfaces dry as the residual disinfectant inhibits mold and mildew growth.



Can Wet Carpet Be Saved

*It may be possible if it is the result of potable water flooding and quick action is taken within 48 hours. Carpet damaged as a result of natural disaster flooding should be disposed.

1. Carpet must be dried out within 48 hours to prevent mold and mildew growth.
2. Pull up carpet to whatever extent possible. If a pad is present, this must be disposed of. For commercial carpeting that is glued down, it may be impossible.
3. Extract Water. Use a portable extractor to remove excess water from the carpet.
4. Dry Carpet: Use fans and if possible, dehumidify the area.
5. Allow air to get underneath the carpet if possible.

Checklist-Guidance for items exposed to clean (potable) water.

Visit the EPA website for added details: <http://www.epa.gov/mold/table1.html>

Water-Damaged Material	Actions
Books and papers	<ul style="list-style-type: none"> • For non-valuable items, discard books and papers. • Photocopy valuable/important items, discard originals. • Freeze (in frost-free freezer or meat locker) or freeze-dry.
Carpet and backing - dry within 24-48 hours	<ul style="list-style-type: none"> • Remove water with water extraction vacuum. • Reduce ambient humidity levels with dehumidifier. • Accelerate drying process with fans.
Ceiling tiles	<ul style="list-style-type: none"> • Discard and replace.
Cellulose insulation	<ul style="list-style-type: none"> • Discard and replace.
Concrete or cinder block surfaces	<ul style="list-style-type: none"> • Remove water with water extraction vacuum. • Accelerate drying process with dehumidifiers, fans, and/or heaters.
Fiberglass insulation	<ul style="list-style-type: none"> • Discard and replace.
Hard surface, porous flooring § (Linoleum, ceramic tile, vinyl)	<ul style="list-style-type: none"> • Vacuum or damp wipe with water and mild detergent and allow to dry; scrub if necessary. • Check to make sure underflooring is dry; dry underflooring if necessary.
Non-porous, hard surfaces (Plastics, metals)	<ul style="list-style-type: none"> • Vacuum or damp wipe with water and mild detergent and allow to dry; scrub if necessary.
Upholstered furniture	<ul style="list-style-type: none"> • Remove water with water extraction vacuum. • Accelerate drying process with dehumidifiers, fans, and/or heaters. • May be difficult to completely dry within 48 hours. If the piece is valuable, you may wish to consult a restoration/water damage professional who specializes in furniture.



Wallboard (Drywall and gypsum board)	<ul style="list-style-type: none"> • May be dried in place if there is no obvious swelling and the seams are intact. If not, remove, discard, and replace. • Ventilate the wall cavity, if possible.
Window drapes	<ul style="list-style-type: none"> • Follow laundering or cleaning instructions recommended by the manufacturer.
Wood surfaces	<ul style="list-style-type: none"> • Remove moisture immediately and use dehumidifiers, gentle heat, and fans for drying. (Use caution when applying heat to hardwood floors.) • Treated or finished wood surfaces may be cleaned with mild detergent and clean water and allowed to dry. • Wet paneling should be pried away from wall for drying.

Checklist-Guidance for items exposed to sewage or otherwise contaminated water or for objects that have been exposed for more than 48 hours.

If you know or suspect that the water source is contaminated with sewage, or chemical or biological pollutants, then Personal Protective Equipment and containment are required by OSHA. An experienced professional should be consulted if you and/or your remediator do not have expertise remediating in contaminated water situations. Do not use fans before determining that the water is clean or sanitary.

For more details, consult the EPA website: <http://www.epa.gov/mold/table2.html>

Material or Furnishing Affected	Cleanup Methods †	Personal Protective Equipment	Containment
SMALL - Total Surface Area Affected Less Than 10 square feet (ft²)			
Books and papers	3	Minimum N-95 respirator, gloves, and goggles	None required
Carpet and backing	1, 3		
Concrete or cinder block	1, 3		
Hard surface, porous flooring (linoleum, ceramic tile, vinyl)	1, 2, 3		
Non-porous, hard surfaces (plastics, metals)	1, 2, 3		
Upholstered furniture & drapes	1, 3		
Wallboard (drywall and gypsum board)	3		
Wood surfaces	1, 2, 3		
MEDIUM - Total Surface Area Affected Between 10 and 100 (ft²)			
Books and papers	3	Limited or Full Use professional judgment, consider potential for remediator exposure and size of contaminated area	Limited Use professional judgment, consider potential for remediator/occupant exposure and size of contaminated area
Carpet and backing	1,3,4		
Concrete or cinder block	1,3		
Hard surface, porous flooring (linoleum, ceramic tile, vinyl)	1,2,3		
Non-porous, hard surfaces (plastics, metals)	1,2,3		
Upholstered furniture & drapes	1,3,4		



Wallboard (drywall and gypsum board)	3,4		
Wood surfaces	1,2,3		
LARGE - Total Surface Area Affected Greater Than 100 (ft²) or Potential for Increased Occupant or Remediator Exposure During Remediation Estimated to be Significant			
Books and papers	3	Full Use professional judgment, consider potential for remediator/occupant exposure and size of contaminated area	Full Use professional judgment, consider potential for remediator exposure and size of contaminated area
Carpet and backing	1,3,4		
Concrete or cinder block	1,3		
Hard surface, porous flooring (linoleum, ceramic tile, vinyl)	1,2,3,4		
Non-porous, hard surfaces (plastics, metals)	1,2,3		
Upholstered furniture & drapes	1,2,4		
Wallboard (drywall and gypsum board)	3,4		
Wood surfaces	1,2,3,4		

Cleanup Methods

- **Method 1:** Wet vacuum (in the case of porous materials, some mold spores/fragments will remain in the material but will not grow if the material is completely dried). Steam cleaning may be an alternative for carpets and some upholstered furniture.
- **Method 2:** Damp-wipe surfaces with plain water or with water and detergent solution (except wood —use wood floor cleaner); scrub as needed.
- **Method 3:** High-efficiency particulate air (HEPA) vacuum after the material has been thoroughly dried. Dispose of the contents of the HEPA vacuum in well-sealed plastic bags.
- **Method 4:** Discard - remove water-damaged materials and seal in plastic bags while inside of containment, if present. Dispose of as normal waste. HEPA vacuum area after it is dried.

Personal Protective Equipment (PPE)

- **Minimum:** Gloves, N-95 respirator, goggles/eye protection
- **Limited:** Gloves, N-95 respirator or half-face respirator with HEPA filter, disposable overalls, goggles/eye protection
- **Full:** Gloves, disposable full body clothing, head gear, foot coverings, full-face respirator with HEPA filter

Containment

- **Limited:** Use polyethylene sheeting ceiling to floor around affected area with a slit entry and covering flap; maintain area under negative pressure with HEPA filtered fan unit. Block supply and return air vents within containment area.
- **Full:** Use two layers of fire-retardant polyethylene sheeting with one airlock chamber. Maintain area under negative pressure with HEPA filtered fan exhausted outside of building. Block supply and return air vents within containment area.



Multi-Clean Products for Flood Clean-Up.

Disinfectants

The disinfectants below are EPA Registered Products with Virucidal, Bacteriacidal, Fungicidal, and Mildewcidal Claims. For specific claims and more information, visit the Multi-Clean Infection Control web page. <http://www.multi-clean.com/infectioncontrol.html>

Microcide TB: Ready to Use Disinfectant Cleaner. Click Link Below for Tech Data Sheet.
<http://www.multi-clean.com/specs%20pdf/Disinfectants/microcidetbspec.pdf>

Ful-Trole 64 : Concentrated Disinfectant Cleaner. Click Link Below for Tech Data Sheet.
<http://www.multi-clean.com/specs%20pdf/Disinfectants/Fultrole64spec.pdf>

Century Q 256: Concentrated Disinfectant Cleaner. Click Link Below for Tech Data Sheet.
<http://www.multi-clean.com/specs%20pdf/Disinfectants/centuryq256spec.pdf>

Other Products that can assist with flood clean-up

Bio-Power Plus: Odor eliminator that helps destroy odors emanating from drains, sewage or other sources as a result of flooding. Click Link Below for Tech Data Sheet. Caution: This product is not a disinfectant.
<http://www.multi-clean.com/specs%20pdf/Cleaners-Degreasers/Bio-Power%20spec.pdf>