

## Critical steps for flooding in the workplace

Every year businesses experience flooding due to a wide variety of causes including: heavy rains; sewer backup; malfunctioning sump-pump; and broken drain or water supply pipes.

Hazards that can exist in flooded workspaces include electrical shock; falls and struck by hazards from structural damage; skin, respiratory or gastrointestinal infections from bacteria and viruses found in contaminated water; exposure to mold that can grow on wet building materials and contents including paper, drywall, and oriented strand board within 24 hours of flooding. Mold can cause allergy asthma symptoms in vulnerable people.

Failure to rapidly and completely clean a workplace after a flood can lead to further damage to building materials and costly repairs for the electrical system, HVAC, etc. If you have a flood, follow the guidance below.

### Evacuate non-essential and vulnerable people

Only people who can help in the response should remain on site. Of concern are people who are immune compromised as flooding increases the likelihood for contact with contaminated water. Ensure you use signs or other means to keep non-essential people out of flooded areas.

### Stop the water at the source

If you can do so safely, find the source of the water and turn it off, divert it, or seal it up. This may not be possible if the source is due to an act of nature.

### Assess the risk

**1.** Identify any electrical systems and gas

lines impacted by water. Secure or isolate them if it can be done so safely.

- 2.** If impacted, the main electrical panel must be cleaned, dried, and tested by a qualified electrician before use.
- 3.** Identify and prevent use of any appliances, heating, pressure, or sewage system impacted by flood water until electrical components have been thoroughly cleaned, dried, and inspected by a qualified electrician.
- 4.** Check ceilings, floors, walls for buckling and sagging as they may have weakened to the point of collapse.
- 5.** Identify the source and type of water. Health risks are based on the type of water that flooded the space with low to high risk listed below:
  - a. Type I - Clean water from a sink overflow, broken water, or steam line, or rainwater infiltration.
  - b. Type II - Storm drain backups, treated cooling water, some surface water, fire suppression systems, and discharges from equipment.
  - c. Type III - Sewers, some rivers, seawater, and some surface water.

### Protect yourself

- 6.** Assume floodwater is contaminated, wear proper clothing (waders, rubber boots, gloves, Tyvek suit, and goggles, etc. to prevent skin or eye contact).
- 7.** If a drowning risk is present use a life jacket and don't work alone.
- 8.** Do not eat, drink, or smoke around flooded areas.
- 9.** Wash up with soap and water after contact with flood water.
- 10.** See more detailed advice from OSHA's Fact Sheet on Flood Cleanup – Publication 3471.

## Notify people and document the loss

11. Call your facility support personnel to respond to the spill.
12. Notify the building owner and your property insurance carrier.
13. Document everything impacted by the flood, inside and out. Get detailed pictures of damaged items before you remove them.
14. Address special building equipment: HVAC systems and ductwork, groundwater wells, elevators, and shafts. All require trained professionals to evaluate if floodwater impacted these areas.

## Take steps quickly to recover property and prevent mold growth

### 15. Remove excess water

- a. Use wet-dry vacuums and submersible pumps. Squeegee water into floor drains (if present) or to a low spot where it can be pumped or vacuumed out.
- b. If floor drains clog, use a plumber's snake to clean drains.
- c. Keep any extension cords wrapped up and out of the water.
- d. If you use a gas generator or propane powered equipment use a carbon monoxide meter.

### 16. Ventilate the flooded area

- a. Use industrial de-humidifiers, air blowers, fans, and carpet dryers.
- b. Open doors or windows to aid in drying or exhaust air outside.
- c. Do not use heat to dry materials as this will promote mold growth.
- d. The goal is to dry out spaces within 48 hours of removing water.

### 17. Remove water damaged equipment, furniture, and belongings as soon as possible.

- a. Save only those items that can be cleaned with water and soap.
- b. Be prepared to throw away water damaged paper, cardboard, books, and chipboard. Mold growth cannot be prevented on these surfaces.
- c. Throw out water damaged fabric furniture and stuffed toys.

### 18. Remove and dispose water damaged building materials

- a. For Type II and III water: Drywall, paneling, insulation, should be removed 12 inches above the high water line.
- b. For all types of water, dispose of wet ceiling tiles and baseboards.

### 19. Building materials that can remain

- a. Brick, plaster, concrete, linoleum, wall studs, and tile can be cleaned.
- b. Carpet, for type I water, steam clean and dry within 48 hours.

### 20. Remove soil and sediment from building materials and belongings

- a. Use sponges, scrubby pads, or rags to wipe down and clean all surfaces. Floors can be mopped.

### 21. Sanitize everything

- a. Wipe down remaining surfaces including hard surface items. One cup bleach per five gallons water is recommended.
- b. See CDC for more information: <https://www.cdc.gov/disasters/bleach.html>

### 22. Dry building materials completely

- a. Before installing new drywall, flooring, or furniture ensure surfaces are dry or mold can grow.
- b. A moisture meter can be used to check dryness of wood, drywall, and concrete. Wood should have a moisture content of less than 15 percent before drywall or other coverings are placed on the wood.

### 23. Sanitize or dispose clean up equipment

#### If mold is present

Resources for clean-up if mold is growing on building materials and belongings is provided below. Steps 15–23 listed above still apply to these settings. However, moldy locations need isolation from non-affected areas, clean-up methods that prevent spreading mold, and workers need more personal protective equipment.

#### Resources

1. <https://www.epa.gov/mold/mold-remediation-schools-and-commercial-buildings-guide>
2. <https://www.cdc.gov/disasters/mold/index.html>