

Flooded Area Safety & Sanitation

When flooding of an area has occurred, either due to heavy rains or sewer back-ups, important steps must be taken to assure the health and safety of individuals involved. It must be assumed during cleanup operations that all surfaces have been contaminated with potentially disease-causing organisms. This important assumption must be considered in decisions involving safety of personnel as well as what items may be salvaged and what must be discarded.

Flood Safety Tips

- Know your flood risk and elevation above flood stage. Do your local streams or rivers flood easily? If so, be prepared to move to a place of safety. Know your evacuation routes.
- Keep your automobile fueled. During a power outage, gas stations may be unable to supply fuel.
- Store drinking water in clean bathtubs and in other containers in case community water service is interrupted or your private water supply becomes contaminated. Water should be disinfected by boiling at 212°F for 3 minutes.
- Keep an ample supply of food on hand that requires little cooking and no refrigeration.
- Keep first aid supplies on hand.
- Keep a NOAA Weather Radio, batteries, and flashlights in working order.

Personal Protection

- Proper hand washing must be considered the most important aspect of personal protection.
- Cleanup personnel should wash their hands frequently during and after cleanup.
- Boots and rubber gloves should be worn at all times. In cases rigorous splashing of contaminated water may occur, a dust mask and eye protection should also be worn.
- Open windows to provide adequate ventilation when using a bleach solution to sanitize surfaces.
- Cover all cuts and open wounds to prevent potential infection.
- Do not eat, drink or smoke during cleanup procedures.

General Safety

- The potential for electrocution is a true possibility in any flooded area. Wear rubber boots in wet areas and avoid entering buildings until it is certain no electrical hazards exist.
- Turn off main electrical switches and unplug electrical appliances in wet areas.
- Do not turn on any appliances which have become wet until they have been thoroughly dried and checked for proper operation.
- Do not use matches, torches or any other open flame until the area has been thoroughly vented to remove natural gas. The gas or liquid propane supply to all appliances in flooded areas should be shut off until the appliance has been checked.
- To avoid potential exposure to carbon monoxide, only use portable generators OUTSIDE and AWAY from structures.
- Do not use gas or electric stoves or ovens to heat indoor areas.

Cleanup Procedures

- Bacteria, viruses and fungi must be killed in the cleanup process. The most widely accepted, safe and effective sanitizing agent is hypochlorite in the form of household bleach. **The bleach solution recommended for cleanup is one half cup of bleach to one gallon of water.** This solution will have sufficient strength to kill pathogenic organisms.
- Time is an important consideration in cleanup. Pathogenic organisms will not become airborne as long as the surfaces they have contaminated remain wet. Thus, the only way these organisms can enter the body and cause disease is through water splashing into the mouth, mucus membranes, open cuts, etc.
- Once dried, organisms can be spread on dust particles by air movement. Therefore, it is important to bring the bleach solution into contact with the contaminated surfaces as soon as possible after rinsing off heavy soil. Immediately following disinfection, dry all surfaces to prevent rotting and decomposition.

Steps To Take Following Flood Water Recession

- Assure that the above personal protection and general safety steps have been taken.
- Determine what items will have to be discarded and remove them for disposal. Stuffed furniture, pillows and mattresses will typically have to be discarded; indoor/outdoor carpeting and rugs may be salvageable. Thick wall-to-wall carpeting and padding will have to be discarded or professionally treated.
- Thoroughly rinse all visible materials from all items to be kept. Rinse the walls several inches above highest flood level. Carefully rinse behind any base coving to remove all materials. Rinse down the entire floor.

- Prepare the bleach solution as directed above. It may be possible to immerse smaller items in the solution. A broom or mop may be used on larger surfaces to aid in applying the bleach and water solution.
- If the flood waters have reached more than several inches up the sides of hollow walls, these walls will need to be removed. Cut out the area of drywall that has become wet and discard it appropriately. Thoroughly saturate the remaining studs with the bleach solution.
- Allow the bleach solution to remain on all surfaces for at least 15 minutes for adequate kill time.
- Several methods can be used to dry the flooded area. Fans, dehumidifiers, fresh air ventilation, mops, squeegees, and wet/dry vacuums are all good alternatives.
- Over the several weeks following the flood, routinely replace disposable furnace filters or clean permanent filters with the bleach solution several times to reduce the number of trapped mold spores.

If you have any questions not addressed in this fact sheet, please visit www.ccbh.net or contact the Cuyahoga County Board of Health - Environmental Public Health Services at (216)201-2000.

Please visit the links below for additional information on flood response:

[CDC Emergency Preparedness and Response – After a Flood](http://www.bt.cdc.gov/disasters/floods/after.asp)

<http://www.bt.cdc.gov/disasters/floods/after.asp>

[CDC Emergency Preparedness and Response – Flood Safety](http://www.bt.cdc.gov/disasters/cleanup/facts.asp)

<http://www.bt.cdc.gov/disasters/cleanup/facts.asp>

[How to Handle Food Products in an Emergency](http://www.ccbh.net/ccbh/opencms/CCBH/services/environmental_health/foodproducts_fire.html)

http://www.ccbh.net/ccbh/opencms/CCBH/services/environmental_health/foodproducts_fire.html

[FEMA Floods – Are You Ready?](http://www.fema.gov/areyouready/flood.shtm)

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