

# **GENERAL GUIDELINES FOR FLOOD RECOVERY**

## **VOLUNTEERS AND HOME OWNERS**

### **Mud-out Cleaning Procedures**

1. Explain to the homeowner what we do when we mud out a home.
2. Explain to the homeowner the health hazard that may be present if the interior walls have had water and mud between them. Explain that the type of mold that grows from floodwaters and mud can cause serious health problems.
3. Walk carefully through the structure. Floors may be slippery or weakened.
4. Allow homeowner to decide which articles are to be salvaged and which are to be discarded.
5. Be sensitive to homeowner's loss, which will most often be everything due to the contamination of the water, mud, and other substances.
6. Shovel out mud and silt before it dries.
7. Use dollies and hand trucks to remove heavy items.
8. Mattresses and upholstered furniture should be removed and discarded.
9. Remove all built-in cabinets if the water line is above the counter top.
10. Remove and dispose of all floor coverings down to the subfloor.
11. After all articles are removed, determine how much wall removal is necessary.
12. The general guideline is to cut and remove walls 12 inches above flood level.
13. Sweep and vacuum thoroughly.
14. Power / pressure wash entire area beginning at the flood level and work downward if there is a basement. Use a wet vacuum, mops, squeegees, and brooms to remove excess water.
15. Use fans, dehumidifiers, and supplemental heat, if available, to aid the drying process.

16. Disinfect entire area beginning at flood level. Use a pump-up garden sprayer, backpack sprayer, or other type sprayer to lightly spray affected area. Use an appropriate mold remediation product such as Shock Wave (manufactured by Fiber Lock) at approximately 2 oz per gallon of water. NOTE: bleach products are NOT effective in preventing mold on porous substances such as wood. Check product labels carefully to determine if they are effective in your situation!
17. Allow the area to dry thoroughly before beginning repairs. Drying time may take from a few weeks to several months. Again, fans, dehumidifiers, and supplemental heat may hasten this process. Confirm with local officials (building department/inspector) what moisture level should be reached before beginning to rebuild.
18. To sanitize: use one tablespoon bleach to one gallon water. This is recommended for dishes and does not need to be rinsed.
19. To disinfect: apply an appropriate acceptable mold remediation product, such as Shock Wave, with garden sprayer, etc. See # 16 above.

## **Safety Practices**

In assessing your own situation and making decisions about safety, crews must be the primary concern. Know your limitations. Many well-intentioned volunteers have been injured or killed during operations simply because they did not pay attention to their own physical and mental limitations. You must know your limits and monitor your condition. Fatigue leads to injury.

Buddy System – Always work in pairs or in a group.

Hazards – Be alert for hazards, such as sharp objects, dust, hazardous materials, power lines, leaking natural & LP gas, high water, fire hazards, and unstable structures. If water is present, check the depth before entering. Never enter rising water.

Safety Equipment – Use appropriate personal protection equipment (PPE).

- Hard hat
- Goggles / Safety glasses
- Appropriate respirator (N95 or better rating)
- Work gloves
- Rubber boots
- Heavy duty rubber gloves
- Disposable ‘Tyvek’ type coveralls to protect regular work clothes.

## **Safety Rules**

1. Confirm that all utilities have been turned off before entering a damaged building, especially in wet areas. Stand on dry area while turning electrical switches off in wet areas.
2. When entering a flooded area, assume the area is contaminated. Graves may have been opened; septic and sewer systems will overflow; household cleansers as well as other products often found around a home pose a health risk. LP gas tanks may be loose and leaking. Remember, LP gas gathers close to the ground.
3. Normally stepping on a rusty nail would bring the risk of tetanus. In a flood situation, the nail could also carry hepatitis or potentially deadly diseases. Therefore, anyone responding to a flood disaster must have a current tetanus shot and should consider getting hepatitis shots.
4. It is common in disasters to encounter wild and domestic animals that may be rabid. Snakes, and possibly even alligators, may be in spaces you would not expect them. Never reach into a space you cannot see into. Be cautious of dogs and cats wandering or approaching the area.
5. Examine structures for damage before entering or working – floors, overhead, walls, loose objects that may fall. If there is question about the integrity of a building, wait until local building authorities have inspected the building before entering.
6. Ventilate closed rooms or buildings before entering to allow escaped gas or foul odors to escape and continue to provide ventilation while working. Do not linger in areas where gas fumes are present. Be especially careful about flames or sparks where fumes are detected.
7. Make certain you have good footing when using ladders and scaffolds. Be extra cautious in wet or slick areas.
8. Remove ladders, scaffolds, or ropes when not in use to prevent children or others from climbing. Do not leave tools and equipment unattended. Guard against leaving piles of lumber, furniture, clothing, debris, etc. where children might play and risk injury.
9. In flooded areas – basements, floors, outdoor pools – probe ahead for holes or submerged objects. Use a wood pole with a dry handle.
10. Avoid fatigue. Do not work on ladders or scaffolds or operate machinery when tired or on medications that cause drowsiness.

11. Wear proper clothing, i.e., boots in wet areas, heavy shoes in construction areas, gloves, hard hats, long pants and sleeves. Protect yourself against the sun or cold. Wear safety equipment as required or provided.
12. Provide sufficient lighting in work areas – daylight or artificial. Look first before entering areas. Check for glass, nails, or other sharp and protruding objects.
13. Be aware of where other volunteers are located and be concerned for their safety before throwing something out a window or using equipment.
14. Assume fallen electrical lines are live until notified by utility companies that current is off (also phone service and cable TV). Continue to use caution because of possible improper use of electric generators in nearby homes.
15. Prevent health hazards by cleaning areas where decay, mildew, or chemicals odors may result from wetness or perishables, such as food.
16. Only experienced persons should operate power machinery. Follow safety requirements when refueling is taking place. Never operate gas power equipment indoors.
17. Designate a first aid coordinator.
18. Make safety and hygiene a priority. Get adequate rest, fluids, and nourishment so you can achieve maximum effectiveness.
19. Personal cleansing
  - a. Take boots and gloves to assigned area to be cleaned. Also, clean equipment (tool, shovels, etc.).
  - b. Keep clean clothes in a plastic bag at housing site.
  - c. Take regular showers and dress in clean clothes.
  - d. If appropriate cleaner is not available, bleach solution (2 tablespoons of bleach per one gallon of water) can be used to clean your body. Premix in marked gallon jugs.
  - e. Place contaminated clothes in a plastic bag and return clothes to designated location to be laundered in disinfectant—very important.
20. Lifting should always be done in a way that protects the back from strain or other injury. To lift safely:
  - Bend your knees and squat.
  - Keep the load close to your body.
  - Keep your back straight.
  - Push up with your legs.

## Helpful Hints

1. Wear suitable rain gear and rubber boots while spraying or pressure washing.
2. Use rubber gloves and wear goggles when handling bleach and other disinfectants.
3. Wear heavy-duty rubber gloves with work gloves over them.
4. Work within your strengths and limitations – physical (strength and health), emotional (stress management), and mental (knowledge and skills).
5. Use hand sanitizer before consuming anything or wash hands with bleach and water mix. (one tablespoon bleach to one gallon water).
6. Disinfect tools used each day upon completion of work. At the end of the day, dispose of all used mop heads and sponges.
7. Do not drink water in area until verified safe.
8. Eat regularly and increase water intake according to heat and workload. Take snacks and bottled water to site. Take appropriate precautions to clean hands before getting snacks, water, and meals.
9. Rest when you can. Some people can work longer than others. Gauge yourself. Do not be intimidated by what others do if it affects your strength and usefulness. Sleeping may be difficult. Try to arrange what is best for you.
10. Dispose of any articles that are punctured (such as gloves and boots).
11. Do not open refrigerators and freezers. Duct tape doors and keep them shut.
12. If you are unfamiliar with motorized tools, do not attempt to use them until properly trained.
13. If basement is flooded, start pumping the water in stages (pump about 1/3 of the water each day).
14. Make safety a priority so that you can achieve maximum effectiveness, not only for you but also your team.

## **Procedure for Draining a Basement**

Water in the ground outside a building is pushing hard against the outside of the basement walls. The water inside the basement is pushing right back.

If the basement is drained too quickly, the pressure outside the walls will be greater than the pressure inside the walls, which may make the walls and floor crack and collapse, causing serious damage.

Follow these steps to pump water out of a basement without causing damage:

1. Never go into a basement that has water standing in it unless you are sure the electricity is off.
2. When the floodwaters are no longer covering the ground, you can start pumping the water out of the basement.
3. Pump the water level down to two to three feet. Mark the level and wait overnight.
4. Check the water level the next day. If the water went back up or covered your mark, it is still too early to drain the basement. Wait 24 hours. Then pump the water down to two to three feet again. Check the level the next day.
5. When the water stops going back up, pump down another two to three feet and wait overnight. Repeat steps four and five until all the water is pumped out of the basement.

**Don't be part of the problem,  
Be part of the solution.**

## Mud-Out Equipment List

- \_\_\_\_\_ Respirators appropriate for tasks – N95 (disposable, half face, or full face)
  - \_\_\_\_\_ Hope in Crisis tracts
  - \_\_\_\_\_ Equipment ‘owners manuals’
  - \_\_\_\_\_ Fire extinguisher
  - \_\_\_\_\_ First aid kit
  - \_\_\_\_\_ (2) Gas-powered pressure washer (minimum 2000 psi)
  - \_\_\_\_\_ (4) 50-foot heavy duty water hose
  - \_\_\_\_\_ 2 ½” gas-powered water pump
  - \_\_\_\_\_ (2) sump pumps
  - \_\_\_\_\_ 3500-watt generator with extension cords and floodlights
  - \_\_\_\_\_ Electric exhaust fan
  - \_\_\_\_\_ 16-inch chainsaw with spare bar and chain (chaps, helmet, ear and eye protection, gloves)
  - \_\_\_\_\_ Heavy duty wet/dry shop vac with filters and bags
  - \_\_\_\_\_ Five-gallon gas can
  - \_\_\_\_\_ (2) 2 ½-gallon gas cans
  - \_\_\_\_\_ Tool box with basic tools
  - \_\_\_\_\_ (6) wrecking bars (crow and pry bars) of assorted lengths
  - \_\_\_\_\_ Reciprocating saw with spare blades
  - \_\_\_\_\_ Circular saw with spare blades
  - \_\_\_\_\_ ½-inch drill with assorted bits
  - \_\_\_\_\_ Bolt cutters
  - \_\_\_\_\_ Sledge hammer
  - \_\_\_\_\_ Large scoop shovel
  - \_\_\_\_\_ Square shovels
  - \_\_\_\_\_ Hack saw with spare blades
  - \_\_\_\_\_ (3) wheelbarrows
  - \_\_\_\_\_ Appliance hand truck
  - \_\_\_\_\_ (2) water coolers
  - \_\_\_\_\_ Six-foot step ladder
  - \_\_\_\_\_ (4) 18-inch traffic cones
  - \_\_\_\_\_ Squeegees
  - \_\_\_\_\_ Pitch fork
  - \_\_\_\_\_ Brooms
  - \_\_\_\_\_ Rubber gloves and boots
  - \_\_\_\_\_ Rain gear (jacket and pants)
  - \_\_\_\_\_ Hard hats
  - \_\_\_\_\_ Head lamps/lights
  - \_\_\_\_\_ Contractor size trash bags (55 gallon)
  - \_\_\_\_\_ (2) garden sprayers
  - \_\_\_\_\_ (6) five-gallon buckets
  - \_\_\_\_\_ Mold remediation product (Shock Wave) – several gallons
  - \_\_\_\_\_ Bleach (do not store in the trailer) – 1 or 2 gallons
  - \_\_\_\_\_ (6) empty one-gallon jugs for mixing sanitizing solution
- (Continued on backside)**

**Optional**

- \_\_\_\_\_ Additional pressure washer
- \_\_\_\_\_ Heavy duty mud hog pump