

The damage that natural disasters such as hurricanes, floods, and tornados leave behind can create serious health and safety hazards for employees responsible for recovery and cleanup – including utility workers, law enforcement and emergency medical personnel, firefighters, and contractors. Hazards include fall and lifting hazards, rodents, snakes, insects, electrocutions, noise, cuts and lacerations, and high ambient temperatures. Floodwaters and standing waters pose a variety of risks, including infectious diseases, chemical hazards, and injuries.

Even if extensive damage doesn't occur during a storm, worksite conditions will have likely changed. Some employees might be engaged in non-routine activities as they prepare for businesses to reopen and employees to return to work. Employees involved in recovery efforts have the right to a safe workplace under the Occupational Safety and Health Act. Take these preventive steps to help ensure safety during cleanup from a hurricane, flood, or tornado.



## Inspection and first steps

- Listen to local officials for updates and instructions.
- Inspect worksites and facilities before allowing employees to enter. Evaluate structures, surfaces, roadways, trenches, and excavations for stability. Have a registered professional engineer or architect certify that buildings are safe.
- Identify tasks to be done and the hazards involved, and train employees on safe work practices.
- Be aware of potential chemical hazards during floods. Floodwaters might have moved containers of hazardous chemical solvents or other industrial chemicals from their normal storage places. Contact local authorities or the U.S. Environmental Protection Agency (EPA) National Response Center at 1-800-424-8802 to get guidance about safely disposing of containers of toxic or unknown substances or to report oil and chemical spills.
- Establish a plan for contacting emergency personnel in case of emergency.
- Re-evaluate your fire evacuation plan and suppression system that will be used during cleanup.
- Assess road conditions for closures and damage before employees drive for work. Make sure employees who drive on the job are qualified to do so.

## Electrical concerns

- Report hazards such as downed power lines, frayed electric wires, or gas leaks to utility providers. Assume that all wires and power lines are energized, especially if there has been a power outage and you don't know when the utility provider will restore power.
- Beware of overhead and underground lines, especially when moving ladders or equipment near them. Train equipment operators, spotters, and employees to keep equipment more than 10 feet away from overhead power lines.
- Find locations where employees – or their power tools – could contact energized electric circuits. Turn off electrical systems, follow lockout/tagout procedures, and have a qualified electrician inspect equipment before resuming work.
- Avoid walking through floodwaters – they can be electrically charged or hide dangerous debris or ground that was washed away.
- Use a wooden (not metal) pole to check flooded areas for pits or protruding objects.
- Exhaust from electric generators is toxic. Put generators outdoors and away from doors, windows, and vents.

## Debris management

- Inform employees working in areas where debris is being collected and deposited of hazards they might encounter during recovery efforts.
- Develop and use a site plan for debris collection. Be aware that typical recycling and solid waste disposal often do not apply to disaster debris. Visit [www.epa.gov](http://www.epa.gov) for details on debris disposal, renovation, and rebuilding.
- Provide traffic flow details and train employees to stay clear of all motorized equipment. Explain to employees never to position themselves between mechanical equipment, blind spots, and fixed objects.
- Provide all employees with high-visibility reflective vests that equipment operators and emergency vehicles can easily spot.
- Provide radio equipment and extra batteries to all spotters and equipment operators so that they can communicate warnings.
- Protect employees exposed to vehicular traffic during the cleanup operations by posting warning signs along roadways to warn drivers of work in progress. Use flaggers, traffic cones, and highway channeling devices to steer traffic away from employees working along the roadway.
- Require use of seat belts and rollover protection for all equipment where tip-over hazards are present.
- Ensure that all motorized equipment has working backup alarms so that nearby employees are aware of the equipment's movements.

## Illness and injury prevention

- Provide first-aid kits to care for minor cuts and scrapes. If employees cut themselves on sharp debris, provide first aid but quickly seek medical attention if there are signs of infection.
- Take frequent rest breaks, especially when lifting heavy, water-laden objects.
- Practice good lifting techniques to avoid overexertion and back injuries.
- Stay hydrated.

## Floodwater precautions

- Be aware of possible biological hazards employees might encounter, such as dead animals. Floodwaters can contain high levels of raw sewage and other contaminants.
- Avoid exposure to floodwaters if employees have an open wound, or cover the wound with a waterproof bandage. If a wound develops redness, swelling, or drainage, seek immediate medical attention.
- Wash hands with soap and water that has been boiled or disinfected after contact with floodwater.
- Clean surfaces that have touched floodwater with soap and warm, clean water; rinse; then sanitize using a solution of 1 cup bleach and 5 gallons water.
- Sanitize clothing, tools, and equipment with soap and water after coming into contact with contaminated floodwater or chemicals. If you can't access clean water, use a solution of ¼ cup bleach and 1 gallon water – then allow materials to drain and air dry to help stop mold.

## Personal protective equipment

- Provide all employees with personal protective equipment, including hard hats, safety glasses, waterproof work boots with steel toes and insoles, and heavy-duty leather gloves.
- If employees will be working in floodwaters, provide life vests (in deep water) and waterproof gloves, boots, waders, or other gear to protect skin from chemicals, bodily fluids, and other contaminants.
- Wear chaps when using chainsaws.

- Protect legs against snakebites by wearing snake boots or gaiters.
- Provide insect repellent containing DEET or picaridin to prevent insect bites.
- If employees must shout to be heard over noise from equipment such as chain saws, backhoes, tractors, pavement breakers, blowers, and dryers, provide earplugs or other hearing protection devices.

The Texas Department of Insurance Occupational Safety and Health Consultation (OSHCON) program's professional consultants can help small to medium-sized employers that are affected by a storm identify health and safety hazards employees might encounter during recovery and cleanup and provide guidance on how to fix them. We can help onsite or over the phone. Visit [www.txoshcon.com](http://www.txoshcon.com) for more information.

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