

Tornado protection, preparation, response and recovery

Most areas of the United States are susceptible to tornadoes, but a majority of the tornadoes and severe damage typically occur east of the Rocky Mountains, particularly in the Plains states. This stretch of land is often referred to as “Tornado Alley.”

Tornadoes typically occur during the spring and summer months, but they have occurred at other times of the year, as well. More than 1,000 tornadoes are reported in the United States each year, resulting in serious property damage, injuries and deaths.

A tornado is defined as a violently rotating column of air that extends from a thunderstorm to the ground. The larger and more violent tornadoes can result in serious destruction and, at times, winds can reach speeds of 250 mph or more. Sometimes the damage from a tornado can extend up to one mile in width. Some tornadoes have been known to stay on the ground for as long as 50 miles.

Tornadoes typically develop quickly – sometimes with little or no warning. However, because tornadoes typically occur during predictable times of the year, this will allow for some preparation. In most cases, damage from a direct tornado hit cannot be avoided, but there are steps that can be taken to lessen the damage from a near miss.

Preparation before a tornado

Prepare a written pre-emergency plan and practice it on a routine basis, whether it is for your home, commercial occupancies, schools, etc. The following is a list of recommended items that should be put into practice and covered routinely to ensure a timely response in the event of a tornado.

- Develop a written pre-emergency plan.
- Conduct routine tornado drills to ensure everyone (family members, employees, students, etc.) understands and feels comfortable with the plan in the event of a real emergency.
- Know the county/parish/town in which you live, work or go to school, and keep a highway map nearby to follow the storm movement from weather bulletins.
- Have a National Oceanic and Atmospheric Administration (NOAA) weather radio with a warning alarm tone to receive any warnings. (This radio should have a battery backup.)
- During tornado season, it is recommended that you stay tuned to a radio or television to keep informed of any information that may be available on any potential tornado activity in the area.
- Before taking any trips away from your home or business, listen to the latest forecasts and take the appropriate and necessary action.
- Take an inventory of your household and/or business items before anything happens, such as a tornado, and keep the list in a safe place.
- Minimize yard storage and, if needed, make sure it is secured to the ground appropriately as these items may become airborne and cause additional damage.
- Secure any small storage building that may be exterior to the main structure to reduce the possibility of being thrown into the main structure.

A typical tornado drill can be set up as follows:

- Before running a drill Prior to running any drill, make sure all employees are aware the drill will be taking place. They should be aware of where the safest places are located for them to be during a tornado. The safest places would be, first, in the facility's basement or specially designed tornado shelter, if available. If no basement is available, moving to a windowless interior room, hallway, bathroom, etc., on the facility's lowest level is preferred
- During the tornado drill Initiate the drill using the facility's public address system or have various pre-assigned employees alert the staff to evacuate their areas and report to the previously assigned designated areas. At that point, all occupants should move to the areas pre-assigned as quickly as possible. Once in the safe place, all occupants should be instructed to crouch down facing the floor as low as they can and cover their heads with their hands. Once all occupants have successfully evacuated their areas and are in place, the drill can be called off and the occupants can return to their respective jobs, etc.
- Once the drill is completed Assess whether additional safe areas may be required. Are the safe areas too cluttered with storage, etc.? If so, housekeeping in these areas may be required. Did employees take the quickest route to the designated safe areas? Did the notification process run smoothly, and if not, improve notification method.

Before and during a tornado

- As soon as a tornado has been reported and it is obvious that danger is on its way, move all people (family members, employees, etc.) to a pre-designated shelter to sit out the tornado. The best place is generally an underground shelter or basement in the building.
- If there is no underground shelter available at your home, business, school, etc., move the occupants to an interior room, bathroom or an interior hallway on the lowest floor and have them get under a sturdy piece of furniture or equipment. They should squat down as low as possible face first and cover their heads with their hands to provide some protection in the event of flying or falling debris.
- It is critical to instruct all household members, employees or students to stay away from windows as they can shatter due to flying debris.
- If you are in a vehicle, you should immediately seek shelter in a sturdy building. As a last resort, you can either: stay in the car with the seat belt on. Put your head down below the windows, covering your head with your hands and a blanket if possible, OR if you can safely get noticeably lower than the level of the roadway, exit your car and lie in that area, covering your head with your hands. Your choice should be driven by your specific circumstances.
- Safety professionals suggest that mobile home owners abandon their home immediately, even if the home has been tied down. Typically, mobile homes do not offer much – if any – protection from tornadoes.

Disaster Recovery - After a Tornado

Once the storm has dissipated, you should put your disaster recovery procedures into practice.

- Account for all employees; comply with any evacuation orders.
- Survey the site for any damage. If structural damage has occurred, bring in a structural engineer to evaluate the building.
- Attend to hazardous material spills and other leaks and report to the appropriate agencies as required.
- Check for downed power lines.
- Shut down any leaking sprinkler systems; post a fire watch.

- Activate business continuity plan.
- Restore fire protection systems.
- Start salvage operations.
- Cover and secure openings in roofs and walls.
- Use hot work permit system for repairs involving cutting and welding.

Various resources are listed below that will help in the development of a Disaster Recovery Plan.

Resources

Travelers documents

To access these documents, log in to our Risk Control Customer Center at travelers.com/riskcontrol and type all or part of the title in the “Search All Products” field.

- Disaster Recovery Guide
- Emergency Planning - Do Your Employees Know What to Do?

Websites

- Federal Emergency Management Agency (FEMA) – Tornado
- FEMA – Recovering from Disaster
- NOAA – Tornado FAQs
- NOAA – Fujita Tornado Damage Scale
- NOAA – Tornado Guide
- NOAA – Tornado Preparedness Tips for School Administrators

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