



## Severe Weather Safety Tips

Good planning and preparation are critical for any organization and its employees to survive a natural disaster. In South Carolina, we have learned this firsthand from Hurricane Hugo and the effects of Hurricane Andrew. A little planning can prevent unnecessary panic and confusion. This brochure is designed to assist employers and employees in South Carolina in recognizing the warning signs of different types of natural disasters and in implementing an effective emergency preparedness plan. Not only will an effective plan assist you in protecting employers and employees, it also will protect your assets, help minimize losses, and spell survival for your organization.

## Elements Of A Written Plan for Your Organization

To enhance the safety of employees and reduce the probability of injuries during severe weather, an emergency action plan is recommended for all businesses and industries. As with any plan, it should be site specific and address the needs of your organization. Listed below are suggested elements of a written plan for your organization:

- Accountability for all employees including contractors
- Responsibilities of management/supervisors in conducting headcounts/checklists
- Posting of signs in meeting areas
- Conducting emergency drills
- Identifying employee roles
- Putting alarm systems in place and making sure they are in working order
- Training for all employees

For more information on emergency plans, contact the Office of OSHA Voluntary Programs at (803) 896-7769, or write to P.O. Box 11329, Columbia, SC 29211-1329.

**One of the best tools for employers is NOAA radio with the 10-second alarm system. When the National Weather Service issues a severe weather warning, the alarm will sound.**

South Carolina Department of Labor,  
Licensing and Regulation  
Office of OSHA Voluntary Programs  
P.O. Box 11329  
Columbia, SC 29211-1329



## Severe Weather Safety Tips

A Guide for Employers and Employees on How to Survive a Natural Disaster

South Carolina Department of Labor,  
Licensing and Regulation  
Office of OSHA Voluntary Programs  
(803) 896-7769



## Tornadoes

These violent windstorms are characterized by a twisting, funnel-shaped cloud. They are spawned by a thunderstorm (or sometimes the result of a hurricane) and are produced when cool air overrides a layer of warm air, forcing the warm air to rise rapidly. Damage from tornadoes is the result of the high wind velocity and wind-blown debris.

Tornadoes can strike at wind speeds up to 300 mph. They are most destructive when they touch ground and typically stay on the ground about 20 minutes. An approaching cloud of debris can mark the location of a tornado even if a funnel is not visible. Before a tornado hits, the wind may die down, and the air may become very still. Tornadoes generally occur near the trailing edge of a thunderstorm. It is not uncommon to see clear, sunlit skies behind a tornado.

Tornado season is generally March through August, although tornadoes can occur any time of year. More than 80 percent of tornadoes strike between noon and midnight.

### Advance Preparation

- Establish true north and place a north arrow on the floor plans of the building.
- Check completely around the building, looking for and recording location of potential hazards, such as site equipment, nearby buildings, automobiles and other debris.
- Look for additional hazards such as ground embankment against the buildings, mechanical equipment on the roof, electrical service entrance and high building elements, such as chimneys.
- Look from the south and west, noting building entrances, windows and construction features.
- Look for changes in roof level.
- Know tornado history for the geographic area.
- Obtain floor plans of the building.
- Obtain a compass, flashlight and tape measure.
- Listen to local emergency weather channels.
- Post phone numbers of the local emergency services offices.

### Avoid

- Locations where roof is likely to be blown off, such as windward edges (usually south and west), long spans, portions with loadbearing wall supports and portions with overhangs on the windward sides.
- Exterior walls that are most likely to be partially or completely destroyed. The most likely damage to these walls will occur in the following order, south, west, east, north.
- Corridors with exterior doors allowing direct exit to south, west, east, north, in order of severity of wind tunnels.
- Assume winds will blow in the south and west sides of the building and occasionally on the east and north.
- Portions of buildings that contain loadbearing walls.

### Look For

- Lowest floor of the building.
- Interior spaces. These spaces have no walls on the exterior of the building.
- Short spans. It is difficult to find one space, with the exception of a basement, that will offer a high-degree of protection. Therefore, seek out a number of smaller spaces.
- Rigid structural frames, such as steel, concrete or wood, rather than portions that have loadbearing walls.

### Fujita Tornado Scale

The following is what you can expect with tornadoes:

- F-0: 40-72 mph, chimney damage, tree branches broken
- F-1: 73-112 mph, mobile homes pushed off foundation or overturned
- F-2: 113-157 mph, considerable damage, mobile homes demolished, trees uprooted
- F-3: 158-205 mph, roofs and walls torn down, trains overturned, cars thrown
- F-4: 207-260 mph, well-constructed walls leveled
- F-5: 261-318 mph, homes lifted off foundation and carried considerable distances, autos thrown as far as 100 meters

## Floods

Floods have caused greater loss of life and property, and have disrupted more families and communities in the United States than all other natural hazards combined.

### Advance Preparation

- **Evacuation Routes** - Plan and practice evacuation routes. This plan should include information on the safest routes to shelters.
- **Check Valves** - To prevent flood waters from backing up into sewer drains, have check valves installed in building sewer traps.
- **Utilities** - If instructed to do so by authorities, turn off all utilities at the main switch, and close the main gas valve.
- **Supplies** - Have disaster supplies on hand, such as flashlights and extra batteries, portable battery-operated radio and extra batteries, first-aid kits, emergency food and water and essential medications.

### During A Flood

- Get the latest emergency information.
- If told to evacuate, do so immediately with preassembled emergency supplies.
- If outdoors, climb to higher ground and stay there. Avoid walking through any flood waters.
- If in a car and you come to a flooded area, turn around and go the other way.
- If your car stalls, abandon it immediately and go to higher ground.

### Inspection

- Inspect foundation for cracks and other damage.
- Stay out of the building if flood waters remain around it.
- Check before entering the building and after entry. Examine walls, floors, doors and windows to make sure building is not in danger of collapsing. Watch for loose plaster and ceilings that could fall.
- Look for fire hazards such as broken or leaking gas lines, flooded electrical circuits, submerged electric appliances and flammable or explosive materials.

### Mitigation

- Elevate businesses above the 100-year flood level.
- Relocate businesses out of the flood plain, minimizing the vulnerability of flood damage through both structural and non-structural means.

## Hurricanes

The 74-160 mph winds of a hurricane can extend inland for hundreds of miles. Following a hurricane, inland streams and rivers can flood and trigger landslides. As a hurricane approaches, the skies will darken and winds will grow in strength.

### Advance Preparation

- **Elevation Levels** - Access information regarding flood-stage data for area streams and waterways.
- **Storm Surge** - Inquire as to the potential for inland flooding and storm surge.
- **Escape/Evacuation Route** - Check with emergency management officials for low points and flooding history.
- **Protect Windows And Other Glass** - Board up or shutter large windows securely. Tape exposed glass to reduce shattering. Place coverings around doors to protect against flying glass.
- **Continuous Communication** - Keep battery-operated radios or televisions tuned for accurate information.

### Hurricane Categories

Hurricanes are categorized by intensity on a scale of 1 to 5 which includes:

Category	Wind (mph)	Storm Surge (feet)
I	74-95	4-5
II	96-110	6-8
III	111-130	9-12
IV	131-155	13-18
V	156 plus	19 plus