



Winter Storms and Extreme Cold

Heavy snowfall and extreme cold can immobilize an entire region. Even areas that normally experience mild winters can be hit with a major snowstorm or extreme cold. Winter storms can result in flooding, storm surge, closed highways, blocked roads, downed power lines and hypothermia.

Know Your Winter Storm and Extreme Cold Terms

Familiarize yourself with these terms to help identify a winter storm hazard:

Freezing Rain

Rain that freezes when it hits the ground, creating a coating of ice on roads, walkways, trees, and power lines.

Sleet

Rain that turns to ice pellets before reaching the ground. Sleet also causes moisture on roads to freeze and become slippery.

Winter Storm Watch

A winter storm is possible in your area. Tune in to NOAA Weather Radio, commercial radio, or television for more information.

Winter Storm Warning

A winter storm is occurring or will soon occur in your area.

Blizzard Warning

Sustained winds or frequent gusts to 35 miles per hour or greater and considerable amounts of falling or blowing snow (reducing visibility to less than a quarter mile) are expected to prevail for a period of three hours or longer.

Frost/Freeze Warning

Below freezing temperatures are expected.

Before Winter Storms and Extreme Cold

Add the following supplies to your disaster supplies kit:

- **Rock salt** to melt ice on walkways
- **Sand** to improve traction
- **Snow shovels** and other snow removal equipment.

Prepare your home and family

- **Prepare for possible isolation in your home** by having sufficient heating fuel; regular fuel sources may be cut off. For example, store a good supply of dry, seasoned wood for your fireplace or wood-burning stove.
- **Winterize your home** to extend the life of your fuel supply by insulating walls and attics, caulking and weather-stripping doors and windows, and installing storm windows or covering windows with plastic.
- **Winterize your house, barn, shed or any other structure that may provide shelter** for your family, neighbors, livestock or equipment. Clear rain gutters; repair roof leaks and cut away tree branches that could fall on a house or other structure during a storm.
- **Insulate pipes** with insulation or newspapers and plastic and allow faucets to drip a little during cold weather to avoid freezing.
- **Keep fire extinguishers on hand**, and make sure everyone in your house knows how to use them. House fires pose an additional risk, as more people turn to alternate heating sources without taking the necessary safety precautions.
- **Learn how to shut off water valves** (in case a pipe bursts).
- **Know ahead of time what you should do to help elderly or disabled friends, neighbors or employees.**
- **Hire a contractor to check the structural ability of the roof** to sustain unusually heavy weight from the accumulation of snow - or water, if drains on flat roofs do not work.

Prepare your car

- **Check or have a mechanic check the following items on your car:**
 - **Antifreeze levels** - ensure they are sufficient to avoid freezing.
 - **Battery and ignition system** - should be in top condition and battery terminals should be clean.
 - **Brakes** - check for wear and fluid levels.
 - **Exhaust system** - check for leaks and crimped pipes and repair or replace as necessary. *Carbon monoxide is deadly and usually gives no warning.*
 - **Fuel and air filters** - replace and keep water out of the system by using additives and maintaining a full tank of gas.
 - **Heater and defroster** - ensure they work properly.

- **Lights and flashing hazard lights** - check for serviceability.
- **Oil** - check for level and weight. Heavier oils congeal more at low temperatures and do not lubricate as well.
- **Thermostat** - ensure it works properly.
- **Windshield wiper equipment** - repair any problems and maintain proper washer fluid level.
- **Install good winter tires.** Make sure the tires have adequate tread. All-weather radials are usually adequate for most winter conditions. However, some jurisdictions require that to drive on their roads, vehicles must be equipped with chains or snow tires with studs.
- **Maintain at least a half tank of gas** during the winter season.
- **Place a winter emergency kit in each car** that includes:
 - a shovel
 - windshield scraper and small broom
 - flashlight
 - battery powered radio
 - extra batteries
 - water
 - snack food
 - matches
 - extra hats, socks and mittens
 - First aid kit with pocket knife
 - Necessary medications
 - blanket(s)
 - tow chain or rope
 - road salt and sand
 - booster cables
 - emergency flares
 - fluorescent distress flag

Dress for the Weather

- **Wear several layers** of loose fitting, lightweight, warm clothing rather than one layer of heavy clothing. The outer garments should be tightly woven and water repellent.
- **Wear mittens**, which are warmer than gloves.
- **Wear a hat.**
- **Cover your mouth** with a scarf to protect your lungs.

During a Winter Storm

- **Listen to your radio, television, or NOAA Weather Radio** for weather reports and emergency information.
- **Eat regularly and drink ample fluids**, but avoid caffeine and alcohol.
- **Conserve fuel, if necessary**, by keeping your residence cooler than normal. Temporarily close off heat to some rooms.
- **If the pipes freeze**, remove any insulation or layers of newspapers and wrap pipes in rags. Completely open all faucets and pour hot water over the pipes, starting where they were most exposed to the cold (or where the cold was most likely to penetrate).
- **Maintain ventilation when using kerosene heaters** to avoid build-up of toxic fumes. Refuel kerosene heaters outside and keep them at least three feet from flammable objects.

If you are outdoors

- **Avoid overexertion when shoveling snow.** Overexertion can bring on a heart attack—a major cause of death in the winter. If you must shovel snow, stretch before going outside.
- **Cover your mouth.** Protect your lungs from extremely cold air by covering your mouth when outdoors. Try not to speak unless absolutely necessary.
- **Keep dry.** Change wet clothing frequently to prevent a loss of body heat. Wet clothing loses all of its insulating value and transmits heat rapidly.
- **Watch for signs of frostbite.** These include loss of feeling and white or pale appearance in extremities such as fingers, toes, ear lobes, and the tip of the nose. If symptoms are detected, get medical help immediately.
- **Watch for signs of hypothermia.** These include uncontrollable shivering, memory loss, disorientation, incoherence, slurred speech, drowsiness, and apparent exhaustion.
- **If symptoms of hypothermia are detected:**
 - get the victim to a warm location
 - remove wet clothing
 - put the person in dry clothing and wrap their entire body in a blanket
 - warm the center of the body first
 - give warm, non-alcoholic or non-caffeinated beverages if the victim is conscious
 - get medical help as soon as possible.

If you are driving

- **Drive only if it is absolutely necessary. If you must drive, consider the following:**

- Travel in the day, don't travel alone, and keep others informed of your schedule.
- Stay on main roads; avoid back road shortcuts.
- **If a blizzard traps you in the car:**
 - **Pull off the highway.** Turn on hazard lights and hang a distress flag from the radio antenna or window.
 - **Remain in your vehicle where rescuers are most likely to find you.** Do not set out on foot unless you can see a building close by where you know you can take shelter. Be careful; distances are distorted by blowing snow. A building may seem close, but be too far to walk to in deep snow.
 - **Run the engine and heater about 10 minutes each hour to keep warm.** When the engine is running, open a downwind window slightly for ventilation and periodically clear snow from the exhaust pipe. *This will protect you from possible carbon monoxide poisoning.*
 - **Exercise to maintain body heat, but avoid overexertion.** In extreme cold, use road maps, seat covers, and floor mats for insulation. Huddle with passengers and use your coat for a blanket.
 - **Take turns sleeping.** One person should be awake at all times to look for rescue crews.
 - **Drink fluids to avoid dehydration.**
 - **Be careful not to waste battery power.** Balance electrical energy needs - the use of lights, heat, and radio - with supply.
 - **Turn on the inside light at night** so work crews or rescuers can see you.
 - **If stranded in a remote area,** stomp large block letters in an open area spelling out HELP or SOS and line with rocks or tree limbs to attract the attention of rescue personnel who may be surveying the area by airplane.
 - **Leave the car and proceed on foot - if necessary** - once the blizzard passes.