

# Winter Storm Safety Fact Sheet

HS21-008A (08-21)

**T**exas spans more than 268,000 square miles across 10 climate zones.<sup>1,2</sup> Almost every weather condition is experienced in the state. While Texas is known more for its relentless heat and blistering sunshine, harsh winter weather has also left a destructive and deadly mark on the Lone Star State. Some of the most notable Texas winter storms include the:



- **Panhandle Blizzard of 1957<sup>3</sup>**

For two days in March, a winter storm in the Texas Panhandle dropped 10-15 inches of snow with drifts up to 30 feet. Travel was impassable across parts of nine states. At least 11 people died, and an estimated 20% (17,000) of the cattle in the Panhandle did not survive the storm.

- **West Texas Christmas Blizzard of 2015<sup>4</sup>**

The 2015 West Texas blizzard, the state's worst blizzard to date, produced snowdrifts near the Texas/New Mexico border that exceeded 8 feet. At the same time, wind chill temperatures remained near -5 degrees for days, and winds gusts of 55 to 65 miles per hour (mph) blew down power lines and made post-holiday travel impossible. On the warm side of the winter storm, parts of North Texas (near Dallas) experienced killer tornadoes. Another wave of sleet and snow from the storm brought the South Plains Region to a standstill for 48 hours.

- **The Polar Vortex of 2021<sup>5,6,7</sup>**

Unseasonably cold weather from February 11-16 brought freezing weather that broke 62 all-time daily cold minimum temperatures. The massive winter storm left more than five million Texans without power and 15 million without water for multiple days. Storm-related deaths across the state reached into the hundreds, while property damage estimates exceeded \$125 billion.

## Dangers of Winter Storms

A winter storm is a life-threatening event where the main types of precipitation (moisture in the air) are snow, sleet, or freezing rain, often with dangerous [wind chills](#). According to [The National Severe Storms Laboratory](#), most deaths from winter storms are not directly related to the storm itself, but from:

- traffic accidents on icy roads;
- heart attacks while shoveling snow; or
- hypothermia (abnormally low body temperature) from prolonged exposure to cold.

Of the injuries related to ice, snow, and exposure to cold:

- about 70% occur in automobiles;
- about 25% are people caught out in the storm; and
- about 20% occur in the home.<sup>8</sup>

## Winter Weather Warnings, Watches, and Advisories

The local National Weather Service (NWS) office issues winter weather-related warnings, watches, and advisories. Snow and ice totals can vary greatly over short distances, and winter forecasts can change frequently. As a result, it is vital to **rely on a dependable source for weather information** to prepare and remain safe during a storm. Sign up for your community's weather alert system. The Federal Emergency Management Agency's [Emergency Alert System](#) and the National Oceanic and Atmospheric Administration's (NOAA) [Weather Radio](#) also provide reliable, timely information about emergency warnings, watches, and advisories.

### Warnings: Take Action Now!

A winter weather **warning** means the forecasted weather is potentially **life-threatening**: Heavy snow, sleet, ice, or freezing rain may significantly impact the area. **Seek indoor shelter immediately and stay indoors** until the severe conditions end.

Key terms to know related to winter weather warnings include:

- **Blizzard Warnings**

Blizzard warnings are issued when winds of 35 mph or more combine with blowing and drifting snow with visibilities of ¼ mile or less.

- **Winter Storm Warnings**

Winter storm warnings are issued when forecasts indicate 4 inches or more of heavy snowfall over 12 hours (6 inches or more in 24 hours) or ½ inch of sleet accumulation. A winter storm warning is also issued when a combination of hazardous winter weather in the form of heavy snow, freezing rain, or sleet is looming. Winter storm warnings are usually issued 12 to 24 hours before the event is expected to begin.

- **Ice Storm Warnings**

Ice storm warnings are issued when freezing rain or drizzle may result in ice accumulations of ¼ inch or greater.

- **Wind Chill Warnings**

Wind chill measures how cold people feel due to the combined effect of wind and cold temperatures. The [Wind Chill Index](#) calculates “feels like” temperatures based on the rate of heat loss from exposed skin. Wind chill warnings are issued when wind chill temperatures are expected to be less than or equal to -18 degrees.



## **Watches: Be Prepared!**

A winter **watch** means **hazardous weather conditions – snow, sleet, ice, or dangerous wind chill -- are possible** within the next 12 to 48 hours. People should monitor local forecasts carefully and remain prepared to act according to how the weather system moves or develops. A watch may or may not upgrade to a winter storm warning.

## **Advisories: Be Aware!**

A winter weather **advisory** is issued for light accumulations of snow, freezing rain, freezing drizzle, and sleet that will cause significant inconvenience but **should not threaten lives if caution is exercised**.

## **Staying Safe During Winter Weather**

**When under a winter weather warning, find shelter right away!**

Contact the [Low Income Home Energy Assistance Program](#) for help if you cannot afford your heating costs or energy-related repairs.

## **Preparing for Winter Weather**

Winter storms are dangerous. They can bring cold temperatures, power failures, loss of communication services, and icy roads. Prepare in advance for these hazards both inside, outside, and while on the road.

- **Weatherproof your business and home.**
  - ✓ Prepare your business and home to keep out the cold with insulation, caulking, and weather stripping.
  - ✓ Learn [how to keep pipes from freezing](#). Insulate water lines that run along exterior walls or other areas that are more likely to freeze.
  - ✓ Install storm or thermal-pane windows or cover windows with plastic from the inside.

- ✓ Repair roof leaks and remove tree branches that could fall on structures during the storm.
- **Install and test smoke alarms and carbon monoxide detectors.**
  - ✓ If using a fireplace, wood stove, or kerosene heater, install a smoke detector and a battery-operated carbon monoxide detector near that area. Test the devices monthly and replace batteries twice a year.
  - ✓ Keep a multipurpose, dry-chemical fire extinguisher nearby.
  - ✓ Vent all fuel-burning equipment to the outside.
  - ✓ Have a qualified technician check your furnace system and vent each winter.
- **Create an emergency car kit.**

It is best to avoid traveling, but if it is unavoidable or you get stuck out on the road in a winter storm, ensure your vehicle has the following items:

  - ✓ cell phone, portable charger, and extra batteries;
  - ✓ items to stay warm such as extra hats, coats, mittens, and blankets;
  - ✓ windshield scraper;
  - ✓ shovel;
  - ✓ battery-powered radio with extra batteries;
  - ✓ flashlight with extra batteries;
  - ✓ water and snack food;
  - ✓ first aid kit with any necessary medications;
  - ✓ pocket knife;
  - ✓ tow chains or rope;
  - ✓ tire chains;
  - ✓ canned compressed air with sealant for emergency tire repair;



- ✓ cat litter or sand to help tires get traction, or road salt to melt ice;
- ✓ booster cables with fully-charged battery or jumper cables;
- ✓ hazard or other reflectors;
- ✓ bright colored flag or help signs, emergency distress flag, or emergency flares;
- ✓ road maps; and
- ✓ waterproof matches and a can to melt snow for water.
- **Get your vehicle ready.**

Maintain your vehicle according to the manufacturer's recommendations, and each fall, schedule the following services to prepare for winter weather:

  - ✓ Service the radiator system or check the antifreeze level yourself with a tester. Add antifreeze as needed.
  - ✓ Replace windshield-wiper fluid with a wintertime mixture.
  - ✓ Check tire tread depth and air pressure. Replace any worn tires.
  - ✓ Keep the gas tank near full to help avoid ice in the tank and fuel lines.
  - ✓ Keep the vehicle's heater, defroster, brakes, brake fluid, ignition, emergency flashers, exhaust, oil, and battery in good working order.
- **Gather supplies to shelter in place.**

After a winter weather emergency, you may need to survive on your own for several days. Preparation means gathering the food, water, and other [supplies](#) needed to last for several days without utilities. As you prepare,

  - consider each person's and pet's specific needs and medications. Ensure that you have a basic disaster kit that contains the following:
    - ✓ [water](#) (one gallon per person per day for several days for drinking and sanitation);
    - ✓ [food](#) (at least a three-day supply of non-perishable food);
    - ✓ battery-powered or hand-crank radio and a NOAA Weather Radio with tone alert;
    - ✓ flashlight with extra batteries;
    - ✓ [first aid kit](#);
    - ✓ extra batteries;
    - ✓ whistle (to signal for help);
    - ✓ mask (to help filter contaminated air);
    - ✓ plastic sheeting and duct tape (to [shelter in place](#));
    - ✓ moist towelettes, garbage bags, and plastic ties (for personal sanitation);
    - ✓ wrench or pliers (to [turn off utilities](#)); and
    - ✓ hand-operated can opener (for food).
  - **Take care of livestock.**

Those who live on a ranch need to take special safety precautions for livestock.

    - ✓ Move animals to sheltered areas. [Shelterbelts](#) (windbreaks), properly laid out and oriented, are better protection for cattle than confined shelters, such as sheds.
    - ✓ Provide a water supply. Most animal deaths in winter storms are from dehydration.<sup>9</sup>

## Staying Safe Inside During a Winter Storm

Limiting your time outside during winter storms can reduce many risks such as car crashes and falls on ice. However, there are also many hazards inside to consider.

- **Heat your home and business safely.**

If you plan to use a wood stove, fireplace, or space heater, use extreme caution. Follow the manufacturer's instructions and remember these safety tips:

- ✓ Turning on the stove for heat is not safe. Have at least one of the following heat sources in case the power goes out:
  - extra blankets, sleeping bags, and warm winter coats;
  - fireplace to code with plenty of dry firewood or a gas log fireplace; and
  - portable space heaters or kerosene heaters -- check with your local fire department to make sure kerosene heaters are legal in your area.
- ✓ Use electric space heaters with automatic shut-off switches and non-glowing elements. Make sure to keep them away from any flammable materials, like curtains or blankets.
- ✓ Use fireplaces, wood stoves, or other combustion heaters only if properly vented to the outside. Do not leak gas from the flue or exhaust into the indoor air space.
- ✓ Do not burn paper in a fireplace.
- ✓ Use only the type of fuel designated for your heater. Do not substitute.
- ✓ Keep heat sources, like space heaters, at least 3 feet away from drapes, furniture, or bedding. Never cover your space heater.
- ✓ Never place a space heater near water.
- ✓ Never leave children unattended near a space heater
- ✓ Ensure that your electric space heater cord is not a tripping hazard, but never place it under a carpet or rug.
- ✓ Avoid using extension cords to plug in your space heater.
- ✓ If your space heater has a damaged electrical cord or produces sparks, do not use it.
- **Light your home safely.**

If there is a power failure, use battery-powered flashlights or lanterns rather than candles to avoid fires.
- **Use generators and other appliances safely.**

Use generators, pressure washers, gas and charcoal grills, and similar items outdoors only to prevent carbon monoxide poisoning. The fumes are deadly.

  - ✓ Keep generators and grills at least 20 feet away from any window, door, or vent.
  - ✓ Use only heavy-duty, outdoor-rated extension cords to plug appliances into a generator.
  - ✓ Never use a wet generator or appliance.
  - ✓ Do not store gasoline indoors where the fumes may ignite.
- **Conserve heat.**

Keep as much heat inside your home and business as possible.

  - ✓ Avoid unnecessarily opening doors and windows.
  - ✓ Close off any unneeded rooms.

- ✓ Stuff towels or rags in cracks under doors or windows.
- ✓ Close draperies or cover windows with blankets at night.
- **Keep a water supply.**  
Extreme cold can cause water pipes in your home and business to freeze and sometimes rupture or break. Protect your water pipes with these tips:
  - ✓ Leave all water taps slightly open and continuously dripping.
  - ✓ Keep the temperature inside warm when possible.
  - ✓ Allow heated air to reach pipes by opening cabinet doors beneath kitchen and bathroom sinks or other areas with indoor plumbing.
  - ✓ If your pipes freeze, thaw the pipes slowly with warm air from an electric hairdryer. Do not thaw pipes with a torch.
  - ✓ As an emergency measure, snow can be melted for water if you cannot thaw your pipes or the pipes have broken. Bringing the snow to a rolling boil for one minute will kill most germs, but it will not eliminate the chemicals sometimes found in the snow.
  - ✓ Never use potentially contaminated water to wash dishes, brush teeth, wash and prepare food, wash hands, make ice, or make baby formula. Safe water for drinking, cooking, and personal hygiene includes bottled, boiled, or treated water. Follow any specific recommendations from your local health department for boiling or treating water in your area.



### ***Staying Safe Outside During a Winter Storm***

Dress warmly before going outside in cold weather. Make any trips outside as brief as possible, and use these tips to protect your health and safety:

- **Dress for the weather.**  
Wear warm clothes and stay dry.
  - ✓ Wear a hat, scarf, knit mask to cover the face and mouth, snug sleeves at the wrists, mittens (warmer than gloves), and a water-resistant coat and boots.
  - ✓ Do not leave any areas of your skin exposed to the cold.
  - ✓ Layer-up.  
Using several layers of loose-fitting clothing can insulate the body from the cold.
    - **Inner Layer**  
Wear fabrics that hold body heat and do not absorb moisture. Wool, silk, or polypropylene hold more body heat than cotton.



- **Insulation Layer**

An insulation layer helps retain heat by trapping air close to the body. Natural fibers like wool, goose down, or fleece work best.

- **Outer Layer**

The outermost layer helps protect from wind, rain, and snow. Use tightly woven fabrics, preferably water- and wind-resistant, to reduce the loss of body heat.

- ✓ Keep snow, sleet, and other moisture off the body.
- ✓ Excess sweating causes the body to lose more heat, so remove extra layers of clothing when too warm.
- ✓ Avoid getting gasoline or alcohol on your skin when de-icing or fueling your car or using a snowblower. These materials cause the body to lose more heat.
- ✓ Never ignore shivering. It is a vital first sign that your body is losing heat. Constant shivering is a sign to go inside.

- **Stay off the ice.**

Walking on ice is dangerous. Many injuries related to cold weather happen from falls on ice-covered sidewalks, steps, driveways, and porches. Keep your steps and walkways as free of ice as possible by using rock salt or another chemical de-icing compound. Sand may also be used on walkways to reduce the risk of slipping.

- **Avoid exerting yourself.**

Cold weather puts an extra strain on the heart. If

you have heart disease or high blood pressure, follow your doctor's advice about shoveling snow or performing other hard work in the cold. Otherwise, if you have to do heavy outdoor chores, dress warmly and work slowly to avoid excess sweating. Remember, your body is already working hard to stay warm, so do not overdo it.

- **Avoid traveling.**

It is best to avoid all travel during winter storms, but if you must be on the roads, do so wisely.

- ✓ Let your friends and family know your destination, the route you will take, and when you expect to arrive. Ask them to notify authorities if you are late.
- ✓ Never travel in low visibility conditions.
- ✓ Avoid traveling on ice-covered roads, overpasses, and bridges if possible.
- ✓ Never pour water on your windshield to remove ice or snow. It can shatter your windshield.

- ✓ If you must travel by car, use tire chains.
- ✓ Always carry extra warm clothing and blankets with you. Don't rely on a vehicle to provide enough heat. It may break down.
- ✓ If you get stranded, staying in your car is often the safest choice if winter storms create poor visibility or if roadways are ice-covered. These steps will increase your safety when stranded:
  - Tie a brightly colored cloth to the antenna as a signal to rescuers and raise the car's hood if it is not snowing.
  - Move anything you need from the trunk into the passenger area.
  - Wrap your entire body, including your head, in extra clothing, blankets, or newspapers.
  - Stay awake. You will be less vulnerable to cold-related health problems.
  - Run the motor and heater for about 10 minutes per hour, opening one window slightly to let in air. Make sure that snow is not blocking the exhaust pipe to reduce the risk of carbon monoxide poisoning.
  - As you sit, keep moving your arms and legs to improve your circulation and stay warmer.
  - Do not eat snow, which will lower your body temperature.
  - Huddle with other people for warmth.

- **Know the signs of frostbite and hypothermia.**

- ✓ **Hypothermia**

[Hypothermia](#) is a dangerous condition that may occur when a person is exposed to extremely cold temperatures. Warning signs of hypothermia include:

- shivering;
- exhaustion or feeling very tired;
- confusion;
- fumbling hands;
- memory loss;
- slurred speech; and
- drowsiness.

If you notice any of these signs, take the person's temperature. **If the body temperature is below 95 degrees, the situation is an emergency. Get medical attention immediately.**



## ✓ **Frostbite**

Frostbite is a type of injury caused when the skin and underlying tissues freeze. It can lead to a loss of feeling and color in the areas it affects, usually the nose, ears, cheeks, chin, fingers, and toes. Frostbite can permanently damage the body. In severe cases, frostbite can lead to amputation (surgically removing the affected body part). Signs of frostbite include:

- white or grayish-yellow skin;
- skin that feels unusually firm or waxy; and
- numbness.

**If you notice signs of frostbite, seek medical care.**

For more information on cold weather safety and health, download any of the free Environmental Exposure [publications](#) from the Texas Department of Insurance, Division of Workers' Compensation-Workplace Safety, such as the:

- Cold Stress Fact Sheet ([English/Spanish](#)) and the
- Hypothermia Fact Sheet ([English/Spanish](#)).

## **References**

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<sup>9</sup> The National Weather Service. "Winter Weather and Storm Safety." Website. [https://www.weather.gov/otx/Winter\\_Storms](https://www.weather.gov/otx/Winter_Storms). Accessed August 4, 2021.



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