

Winter Safety Tips

DURING A WINTER STORM

At home:

- To save heat, close off unneeded rooms, cover windows at night and stuff towels or rags in cracks under doors.
- Maintain adequate food and water intake. Food provides the body with energy for producing its own heat.

If travel is necessary:

- Use caution when driving in winter conditions. **The highest rate of traffic crashes due to winter weather is in the month of November when the snow first starts to fall over Michigan.**
- Inform someone of your destination and travel time. Bring a cell phone in case you must call for help.

If traveling and the power goes out:

- Use extreme caution when driving. If traffic signals are out, treat each signal as a stop sign – come to a complete stop at every intersection and look for oncoming traffic before proceeding.
- Do not call 9-1-1 to ask about the power outage. Listen to news radio stations for updates and contact your electrical company.

If stranded in a vehicle:

- Attach a bright cloth to your antenna to attract attention and then remain in the vehicle.
- Run the motor about 10 minutes each hour for heat. However, open the window slightly for fresh air **and make sure the exhaust pipe is not blocked.**
- Attract attention by turning on the dome light and emergency flashers when running the engine.
- To keep blood circulating and to stay warm, exercise by moving arms, legs, fingers and toes.

If stranded outside:

- Try to stay dry and cover all exposed parts of the body.
- Prepare a windbreak or snow cave for protection from the wind. Build a fire for heat and to attract attention.
- Do not eat snow because it will lower your body temperature. Melt it first.

ANYTIME

- Listen to an All-Hazards NOAA Weather Radio or local radio, television and cable stations for the latest updates on hazardous winter weather.
- To ensure uninterrupted weather information, make sure the NOAA Weather Radio or other radio has a battery-operated backup and fresh batteries. A battery-operated TV is also another option.
- For All-Hazards NOAA Weather Radio information, including a station near you, visit the NOAA Weather Radio web site at <http://www.nws.noaa.gov/nwr> or contact your National Weather Service office.



Know the difference between a winter storm WATCH (conditions make the storm possible) and winter storm WARNING (the storm is headed for your area).

A blizzard WARNING means strong winds, blinding wind-driven snow, and dangerous wind chill. Avoid driving and seek shelter.

***For more information on winter storms, visit
<http://www.nws.noaa.gov/om/brochures/winterstorm.pdf>***

Winter Hazards FAQs

On average, a major winter storm hits some part of Michigan at least once per month between October and April. In 2007, the last year that statistics were available, 38 people died in Michigan as a direct result of severe winter weather according to the Michigan Department of Community Health. This is in addition to victims of traffic crashes due to slippery roads and those who suffered heart attacks while shoveling snow.

1. What is wind chill?

Wind chill is the perceived temperature resulting from the effect of wind, in combination with cold air, which increases the rate of heat loss from the human body. More information including the wind chill chart can be found at: <http://www.nws.noaa.gov/os/windchill/index.shtml>

2. What is frostbite and what can you do to treat it?

Frostbite is damage to body tissue caused by that tissue being frozen. Frostbite causes a loss of feeling and a white or pale appearance in extremities, such as fingers, toes, ear lobes, or the tip of the nose. Frostbite varies in severity from frostnip to deep frostbite, depending on the length of exposure, temperature to which the skin is exposed, and wind speed. For frostnip, place firm, steady pressure from a warm hand against the area. Also, blow on the surface holding the frostnipped area against the body. Do not rub the area, apply snow, or plunge it into very hot or cold water. Victims of severe frostbite must receive prompt medical attention.

3. What is hypothermia and what are the warning signs?

Hypothermia occurs when the body temperature drops to 95 degrees F. or lower. It can develop whenever body heat loss exceeds heat gain. Hypothermia is not exclusive to winter. It can occur during the wind and rain of spring and summer. Hypothermia is often mistaken for fatigue, irritability, or dehydration and may include some of these signs: abnormal decision making; improper response to cold; apathy, lethargy; decreased cooperation; slurred speech; disorientation; shivering; stumbling; and stiffness progressing to inability to move.

4. How do you treat hypothermia?

Treating mild to moderate hypothermia (body temperature greater than 90 degrees F., conscious, shivering, able to walk):

- Prevent further heat loss. Dry, remove from cold, and insulate.
- Rewarm by warming the body core first. Rehydrate with warm broth.
- Seek medical attention.

Treating severe hypothermia (body temperature less than 90 degree F., unconscious, not shivering):

- Prevent further heat loss.
- Seek immediate medical attention.

5. What are the various winter weather warnings and advisories?

- A winter storm watch indicates severe winter weather conditions may affect your area in the next 12 to 48 hours.
- A winter storm warning indicates severe winter conditions are imminent. There are a variety of warnings including, ice storm warning, lake effect snow warning, and winter storm warning.
- A winter storm warning for heavy snow *generally* indicates in the Lower Peninsula: snowfalls of at least 6 inches in 12 hours or 8 inches in a 24-hour period. In the Upper Peninsula: snowfalls of at least 8 inches in 12 hours and 10 inches in a 24-hour period.
- Blizzard warnings are issued when sustained wind speeds or frequent gusts of at least 35 miles per hour are accompanied by considerable falling and/or blowing snow, for a period of at least 3 hours. Visibility is greatly reduced to near zero during a blizzard.
- Winter weather advisories are issued when snowfalls are expected to be hazardous, but less than warning criteria. This *generally* indicates in the Lower Peninsula: 4 to 5 inches are expected in a 12-hour period. In the Upper Peninsula: 4 to 7 inches of snow are anticipated in that same time period.
- Freezing rain is rain that freezes when it hits the ground, creating a coating of ice on roads, walkways, trees, and power lines.
- Sleet is rain that turns to ice pellets before reaching the ground. Sleet also causes moisture on roads to freeze and become slippery.

For additional information and a Prevention Guide regarding Extreme Cold, visit <http://www.bt.cdc.gov/disasters/winter/guide.asp>.

Preventing Frozen Pipes

Frozen pipes aren't just an inconvenience. An average of a quarter-million homes are damaged and lives disrupted each winter, all because of frozen water pipes.

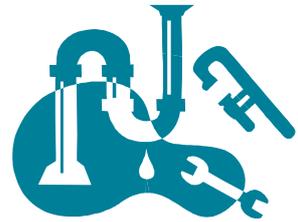
An eighth-inch crack in a pipe can spew up to 250 gallons of water a day, destroying floors, furniture, and personal property. Both plastic (PVC) and copper pipes can burst.

Before the Cold Hits:

- **INSULATE** pipes in crawl spaces and attics, the ones most susceptible to freezing. Remember: The more insulation, the better protected your pipes will be.
- **HEAT TAPE** or thermostatically-controlled heat cables can be used to wrap pipes. Use only products approved by an independent testing organization, such as Underwriters Laboratories, and only for the use intended (exterior or interior). Closely follow all manufacturer's installation and operating instructions.
- **SEAL** leaks that allow cold air inside, especially near the location of pipes. Look for air leaks around electrical wiring, dryer vents, and pipes. Use caulk or insulation to keep cold air out and the heat in. With severe wind chill, a tiny opening can let enough cold air inside to cause a pipe to freeze.
- **DISCONNECT** garden hoses and, if practical, use an indoor valve to shut off and drain water from pipes leading to outside faucets. This reduces the chance of freezing in the short span of pipe just inside the house.

When the Mercury drops:

- **A TRICKLE** of water might be all it takes to keep your pipes from freezing. Let warm water drip overnight, preferably from a faucet on an outside wall.
- **OPEN** cabinet doors to allow heat to get to uninsulated pipes under sinks and appliances near exterior walls.



If you're away:

- **SET** the thermostat no lower than 55 degrees F.
- **ASK** a friend or neighbor to check your house daily to make sure it's warm enough to prevent freezing, or...
- **SHUT OFF** and drain the water system. Be aware that if you have a fire protection sprinkler system in your house, it will be deactivated when you shut off the water.

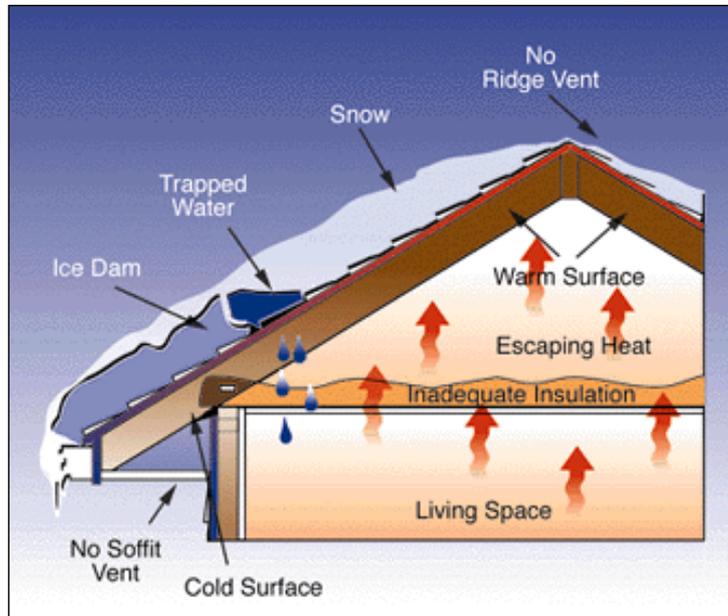
If your pipes freeze:

- **DON'T TAKE CHANCES.** If you turn on your faucets and nothing comes out, leave the faucets turned on and call a plumber. If you detect your water pipes have frozen, turn off the water at the main shut-off valve in the house; leave the water faucets turned on.
- **NEVER** try to thaw a pipe with a torch or other open flame. Water damage is preferable to fire damage. You may be able to thaw a frozen pipe with the warm air from a hair dryer. Start by warming the pipe as close to the faucet as possible, working toward the coldest section of pipe.
- **DO NOT** use electrical appliances in areas of standing water because electrocution is possible.

Make sure everyone in your family is aware of where the water shut-off valve is and how to open and close it.

Preventing Roof Ice Dams

Hot Tips for Preventing Cold Weather Damage



Ice dams are most common in northern climates. They occur when heavy snow buildup melts during the day and then refreezes when temperatures drop overnight.

After several days of freezing-melting cycles, the melted water and ice tend to work up under the shingles until water enters the attic and eventually does damage to the ceilings, walls, and contents. If the ice dam goes unnoticed for an extended period, it can significantly damage the building and its contents.

There's no way to guarantee an ice dam won't damage your home, but you can reduce the likelihood of an ice dam forming in the first place:

- Thoroughly clean all leaves, sticks, and other debris from rain gutters and down spouts. This allows melting roof snow to flow into gutters and through down spouts.
- Strive to keep snow on your roof to a minimum. Long-handled devices called "roof rakes" let you stand on the ground and pull the snow off the roof. Keeping heavy snow loads off your roof reduces the chances for both ice dam formation and roof failure due to the weight.
- Keep gutters and down spouts clear of snow and icicles all winter.
- Evaluate the insulation and ventilation in your attic. Most experts agree attic insulation should have an R-value of at least R-30 (R-38 is preferable in northern climates). In addition, good airflow from under the eaves or soffit area along the underside of the roof and out through the roof vents is essential. The insulation prevents heat loss from the interior of the home. The venting allows the attic air to stay cold enough to prevent or minimize the freeze/thaw cycle on the roof. Consult a reputable roofing and/or insulation contractor about these improvements.

Ice Jams/Flooding

1. What is an ice jam?

Pieces of floating ice carried with a stream's current can accumulate at any obstruction to the stream flow developing an ice jam. These ice jams can accumulate near river bends, mouths of tributaries, points where the river slope decreases, downstream of dams, and upstream of bridges or obstructions. The water held back can cause flooding upstream, and if the obstruction suddenly breaks, flash flooding can occur downstream.

2. When was the last time ice jam flooding occurred in Michigan?

Ice jams occur almost every year in Michigan. In December of 2008, significant flooding occurred in Grand Haven, Spring Lake, and Robinson Township from backwater caused by ice jams in the Grand River. Ice jams have also formed recently on the Flat River near Smyrna, Looking Glass River near Eagle, Maple River near Maple Rapids, Chippewa River near Mt. Pleasant, Grand River near Portland, Grand River at Comstock Park, Muskegon River near Ewart, and the St. Joseph River near Burlington. Over the years, ice jams have also caused flooding on the River Raisin, Thornapple, and Kalamazoo rivers.

3. What time of year is an ice jam likely to occur?

In Michigan, an ice jam can occur anytime from early winter to late spring depending upon changes in temperatures that cause alternate freezing and melting of water surfaces. The most likely times are in early winter before the surfaces are completely frozen and in early spring when the ice cover begins to break up due to melting.

4. What effect does snow have on flooding potential?

When snow melts, it adds water to the ground that drains away in the same way as water from rainfall. On average, one inch of fresh snowfall contains about a tenth of an inch of water. However, as snow accumulates and becomes compacted during the winter, the ratio of snow to water decreases. Thus, 10 inches of snow remaining on the ground into early spring may contain as much as five inches of water. A deep snowpack in late spring increases the flood potential.

5. How fast does snow and ice melt?

Three consecutive days with the maximum temperature of about 50 degrees would create enough melting to cause ice breakup on small streams. These conditions would also melt two inches of snow.

6. What happens when rain falls on top of snow?

Air temperature is still the most important factor in melting snow. Rain does not usually add much heat to the process. At 40 degrees, one inch of rain will only produce a tenth of an inch of added water from snow melt. At the same time, frozen ground will result in more of the available water running off directly to streams.

7. What are the main factors that contribute to snowmelt flooding?

The main factors contributing to spring snowmelt flooding are:

- High soil moisture in the fall
- Significant frost in the ground
- High water content of existing snow cover
- Rapid, continuous melting
- Moderate to heavy rain during melting
- Ice jams

The 2010 Hydrologic Outlooks for the spring snowmelt flood potential will be issued in February and March and can be found at www.weather.gov/grr

Preventing Flood Damage

Your local floodplain manager, building official, city engineer, or planning and zoning administrator can typically tell you whether you are in a flood or other hazard area. Your local community official is also a good source of information on how to protect yourself, your house, and property from flooding and other hazards.

Ways to protect your house and property

Basement flood protection can involve a variety of changes to your house and property—changes that can vary in complexity and cost. You may be able to make some types of changes yourself.

Complicated or large-scale changes or those that affect the structure of your house or its electrical wiring and plumbing should be carried out only by a professional contractor licensed to work in your state, county, or city.

Some methods of flood protection include:

- **Install Sewer Backflow Valves.** In some flood prone areas, flooding can cause sewage from sanitary sewer lines to back up into houses through drainpipes. Sewage backup not only causes damage, but also creates health hazards. Backflow valves have a variety of designs ranging from simple to complex. This is something that only a licensed plumber or contractor should do.
- **Raise or Flood-Proof Heating, Ventilating, and Air Conditioning Equipment.** In flood prone houses, a good way to protect HVAC equipment is elevating it above the areas that flood. Another method is building a concrete or masonry block flood wall around the current location.
- **Anchor Fuel Tanks.** Unanchored fuel tanks can be easily moved by floodwaters. One way to anchor a tank is attaching it to a large concrete slab whose weight is great enough to resist the force of floodwaters. Elevate tanks to a minimum of one foot above the base flood elevation. Floating and/or damaged tanks pose serious threats not only to you, your family, and your house, but also to public safety and the environment.
- **Raise Electrical System Components.** Any electrical system component, including service panels (fuse and circuit boxes), meters, switches, and outlets, can easily be damaged by floodwaters. All components of the electrical system, including the wiring, should be raised at least one foot above the base flood elevation.
- **Raise Washers and Dryers.** Washers and dryers can easily be damaged in a flood. To prevent this from happening, utilities can be placed on cinder blocks one foot above the base flood elevation.
- **Add a Sump Pump in Your Basement.** Sump pumps can help keep groundwater from entering your home's interior.
- **Cut Drywall so It's One-half to 1-inch Off the Floor.** This is especially important in basements. Concrete floors commonly absorb ground moisture—especially in winter months. The moisture can wick up the wallboard if it's touching the floor, allowing mold to grow out-of-sight within the walls. The gap can be hidden with wood or rubberized floor trim.
- **Don't Forget to Buy Flood Insurance.** Flood insurance provides year-round financial protection and improves your ability to quickly recover when severe storms strike and cause unexpected flooding. Call your local insurance agent or 1-800-720-1090 to reach National Flood Insurance Program specialists.

For additional information visit www.floodsmart.gov, the official website of the National Flood Insurance Program.

Flood Insurance FAQs

1. Is flood damage covered by my homeowners insurance?

Most homeowners and renters insurance policies do not cover flood damage. Flood insurance can be purchased as a separate policy.

2. Where can I get flood insurance?

Any licensed property/casualty insurance agent can sell a flood insurance policy. If you experience trouble in locating an agent, contact the National Flood Insurance Program's (NFIP) agent referral program at 1-888-CALL FLOOD or visit

<http://www.floodsmart.gov/floodsmart/pages/purchaseinsurance.jsp>

3. Is there a waiting period before my flood insurance policy becomes effective?

There is a 30-day waiting period before a new or modified flood insurance policy becomes effective.

4. Are all flood insurance policies the same?

Flood insurance coverage can be purchased for homes and businesses – separate coverage must be purchased for the building and its contents.

5. Do I need to live in a floodplain to get flood insurance?

You do not need to live in a floodplain to purchase flood insurance – coverage is available to any building located in a community that is enrolled in the National Flood Insurance Program. For a listing of Michigan communities participating in the NFIP, visit <http://www.fema.gov/fema/csb.shtm>.

6. Is water back up in basements covered by a flood insurance policy?

Coverage for water back up in basements (drains/sewers) is excluded from the flood insurance policy.

7. Can I get coverage for water back up in basements?

Although basement water back up is excluded under most homeowners' insurance policies, coverage can be obtained by purchasing an endorsement. Most insurance companies offer sewer and drain back up as optional coverage. Coverage and limits vary by insurance company, so check with your agent/company about specifics. Some insurance companies include full coverage for sump pump failure while others specify items that are covered.

8. Are there steps I can take to minimize losses from water back up in basements?

- Never store perishables or valuables in basements that you can't afford to lose or replace.
- Do not store any item near basement drains.
- Check storm drain lines to make sure they're clear of debris, roots, etc.
- Grade the property around your home to drain water away from it.
- Install gutters and make sure downspouts are extended away from the foundation in order to carry water away from the basement walls.
- Use shelving or store items several inches above the potential water level to prevent loss.
- If you do have some water seepage following storms, take corrective measures to alleviate problems in the future.

Heat Sources Safety

Each year, fire claims the lives of 4,000 Americans, injures tens of thousands, and causes billions of dollars worth of damage. People living in rural areas are more than twice as likely to die in a fire as those living in mid-sized cities or suburban areas. The misuse of wood stoves, portable space heaters, and kerosene heaters is especially common in rural areas.

The United States Fire Administration (USFA) believes rural fire problems can be reduced by teaching people to recognize potential hazards.

The following precautionary steps can greatly reduce an individual's chances of becoming a fire casualty:

Wood Stoves

Wood stoves cause over 9,000 residential fires every year. Carefully follow the manufacturer's installation and maintenance instructions. Look for solid construction, such as plate steel or cast iron metal. Check for cracks and inspect legs, hinges, and door seals for smooth joints and seams. Use only seasoned wood for fuel, not green wood, artificial logs, or trash. Inspect and clean your pipes and chimneys annually and check monthly for damage or obstructions. Be sure to keep combustible objects at least three feet away from your wood stove.



Electric Space Heaters

Only buy heaters with the Underwriter's Laboratory (UL) safety listing. Check to make sure it has a thermostat control mechanism, and will switch off automatically if the heater falls over. Heaters are not dryers or tables; don't dry clothes or store objects on top of your heater. Space heaters need available room around them; keep combustibles at least three feet away from each heater. Always unplug your electric space heater when it is not in use.

Kerosene Heaters

Buy only UL-approved heaters and check with your local fire department on the legality of using a kerosene heater in your community. Never fill your heater with gasoline or camp stove fuel; both flare up easily. Only use crystal clear K-1 kerosene. Never overfill any portable heater. Use the kerosene heater in a well ventilated room.

Wood Burning Fireplaces

Fireplaces regularly build up creosote in their chimneys. Fireplaces need to be cleaned out frequently and chimneys should be inspected for obstructions and cracks to prevent deadly chimney and roof fires. Check to make sure the damper is open before starting any fire. Never burn trash, paper, or green wood in your fireplace. These materials cause heavy creosote buildup and are difficult to control. Use a screen heavy enough to stop rolling logs and big enough to cover the entire opening of the fireplace to catch flying sparks. Don't wear loose-fitting clothes near any open flame. Make sure the fire is completely out before leaving the house or going to bed. Store cooled ashes in a tightly sealed metal container outside the home.

Having a working smoke alarm and carbon monoxide detector dramatically increases your chances of surviving a fire. Remember to practice a home escape plan frequently with your family.

Portable Generator Hazards

Portable generators are useful when temporary or remote electric power is needed, but they can be hazardous. The primary hazards to avoid when using them are carbon monoxide poisoning, electric shock or electrocution, and fire.

The United States Fire Administration (USFA) would like you to know that there are simple steps you can take to prevent the loss of life and property resulting from improper use of portable generators.

To Avoid Carbon Monoxide Hazards:

- Always use generators outdoors and away from doors, windows, and vents.
- NEVER use generators in homes, garages, basements, crawl spaces, or other enclosed or partially enclosed areas, even with ventilation.
- Follow manufacturer's instructions.
- Install battery-operated or plug-in (with battery backup) carbon monoxide (CO) alarms in your home, following manufacturer's instructions.
- Test CO alarms often and replace batteries when needed.

To Avoid Generator Electrical Hazards:

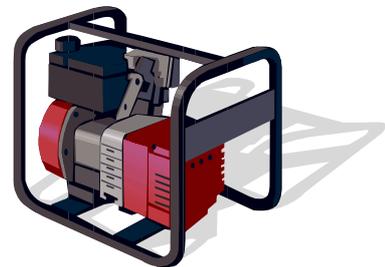
- Keep the generator dry. Operate on a dry surface under an open, canopy-like structure.
- Dry your hands before touching the generator.
- Plug appliances directly into generator or use a heavy-duty outdoor-rated extension cord. Make sure entire extension cord is free of cuts or tears and the plug has all three prongs, especially a grounding pin.
- NEVER plug the generator into a wall outlet. This practice, known as back-feeding, can cause an electrocution risk to utility workers and others served by the same utility transformer.
- If it's necessary to connect the generator to house wiring in order to power appliances, have a qualified electrician install appropriate equipment. Or, your utility company may be able to install an appropriate transfer switch.

To Avoid Fire Hazards:

Before refueling the generator, turn it off and let it cool. Fuel spilled on hot engine parts could ignite. Always store fuel outside of living areas in properly labeled, non-glass containers. Store fuel away from any fuel-burning appliance.

For More Information Contact:

The United States Fire Administration
National Fire Protection Division
16825 South Seton Avenue
Emmitsburg, MD 21727



National Weather Service Offices



Detroit/Pontiac - DTX

NWS Office, NOAA
9200 White Lake Road
White Lake, MI 48386-1126
(248) 625-3309, Ext. 726
Contact: Rich Pollman
www.weather.gov/dtx
Richard.Pollman@noaa.gov

Gaylord - APX

NWS Office, NOAA
8800 Passenheim Road
Gaylord, MI 49735-9454
(989) 731-3384, Ext. 726
Contact: Jim Keysor
www.weather.gov/apx
James.Keysor@noaa.gov

Grand Rapids - GRR

NWS Office, NOAA
4899 South Complex Drive, SE
Grand Rapids, MI 49512-4034
(616) 949-0643, Ext. 726
Contact: Jamie Bielinski
www.weather.gov/grr
Jamie.Bielinski@noaa.gov

Marquette - MQT

NWS Office, NOAA
112 Airport Drive South
Negaunee, MI 49866
(906) 475-5782, Ext. 726
Contact: Matthew Zika
www.weather.gov/mqt
Matthew.Zika@noaa.gov

Northern Indiana - IWX

NWS Office, NOAA
7506 East 850 N.
Syracuse, IN 46567
(574) 834-1104, Ext. 726
Contact: Michael Lewis
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