Winter Safety Communications Pack

Toolkit & Resources

bpx energy

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Winter Safety and Your Role

Winter operations **can be a challenging time of year**. For that reason, it is important for supervisors to help workers **prepare for cold weather work hazards**.

This pack was designed to **give leaders and field staff the resources and planning tools to prepare for winter weather safety**.

Leaders
Please take time to review these topics with your teams and confirm conformance with bpx protocols.

How to Use This Pack
Use these slides to facilitate toolbox talks for enriched discussion and engagement within your teams.

Table of Contents

I. **Working Outdoors in Cold Climates**
- Winter Weather Advisories
- Cold Stress

II. **Cold-Related Illnesses**
- Hypothermia
- Trench Foot
- Frost Bite

III. **Cold Weather Preparation**
- Wind Chill Temperature Index
- Work & Warmup Regimen
- Dressing Properly for the Cold
- Injury and Illness Prevention
- Safe Work Practices

IV. **Outdoor Winter Safety**
- Winter Driving
- Stranded In A Vehicle
- Preventing Slips on Snow and Ice
- Removing Downed Trees
- Shoveling Snow
- Portable Generator Safety



Working Outdoors in Cold Climates

Winter Weather Advisories

Blizzard Warning

- Issued for sustained or gusty winds of 35 mph or more and falling or blowing snow creating visibilities at or below 1/4 mile; these conditions should persist for at least 3 hours.

Wind Chill Advisory

- Issued when wind chill temperatures are expected to be a significant inconvenience to life with prolonged exposure, and, if caution is not exercised, could lead to hazardous exposure.

Wind Chill Warning

- Issued when wind chill temperatures are expected to be hazardous to life within several minutes of exposure.

Winter Storm Warning

- Issued when hazardous winter weather in the form of heavy snow, blizzard conditions, heavy freezing rain, or heavy sleet is imminent or occurring.
- Winter Storm Warnings are usually issued 12 to 24 hours before the event is expected to begin.

Winter Storm Watch

- Alerts the public to the possibility of a blizzard, heavy snow, heavy freezing rain, or heavy sleet.
- Winter Storm watches are usually issued 12 to 48 hours before the beginning of a Winter Storm.

Winter Weather Advisories

- Issued for accumulations of snow, freezing rain, freezing drizzle, and sleet which will cause significant inconveniences and, if caution is not exercised, could lead to life threatening situations.

Cold Stress

Cold stress occurs when **the temperature of the skin and the body's core temperature drop below the normal range**.

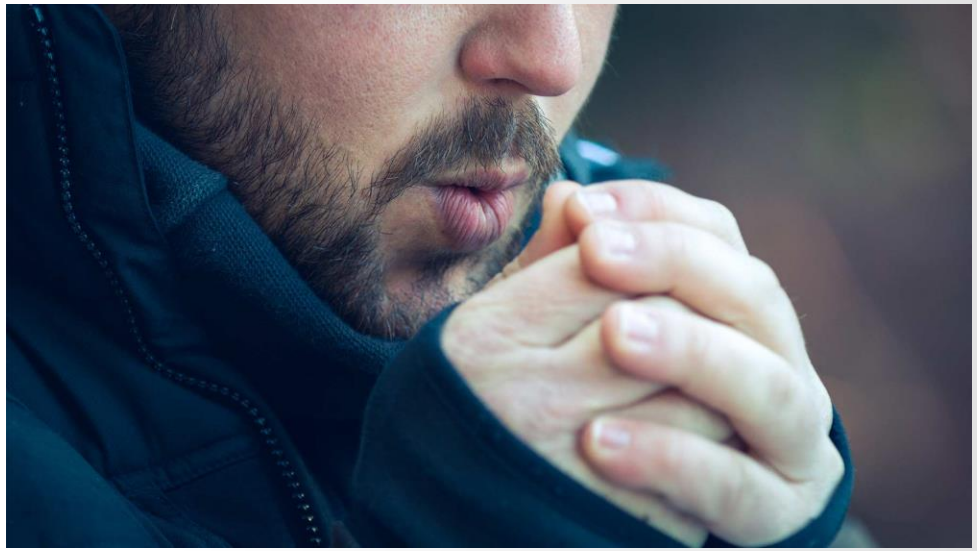
Contributing Factors of Cold Stress

- A cold environment **forces the body to work harder** to maintain its temperature. Whenever temperatures drop below normal, the body will begin to shift blood flow from the extremities (hands, feet, arms, and legs) and outer skin to the core (chest and abdomen).

- **Increased wind speed** also causes heat to leave the body more rapidly (wind chill effect).

- Wetness/dampness (even body sweat), dressing improperly and exhaustion **facilitate heat loss from the body**.

- **Predisposing health conditions** such as hypertension, hypothyroidism, diabetes and poor physical conditioning increase one's susceptibility to cold stress.



Preventing Cold Stress

- **Recognize the environmental and workplace conditions** that can lead to cold stress.
- **Understand symptoms of cold stress**, how to prevent cold stress, and what to do to help those who are affected.
- **Select proper clothing** for cold, wet, and windy conditions. See slide 16 for more details.

Safety Tips for Workers

- Monitor your physical condition and that of your co-workers.
- Dress appropriately for the cold.
- Stay dry in the cold.
- Keep extra clothing (including underwear) handy in case you get wet and need to change.
- Drink warm sweetened fluids (no alcohol).
- Use proper engineering controls, safe work practices, an personal protective equipment (PPE) provided by your employer.
  - **Remember**: the outermost layer of clothing must meet bpx site requirements as FRC if on a bpx location.



Employer Tips

- Monitor workers' physical condition.
- Schedule frequent short breaks in warm dry areas, to allow the body to warm up.
- Schedule work during the warmest part of the day.
- Use the buddy system (work in pairs).
- Provide warm, sweet beverages, and avoid drinks with alcohol.
- Provide engineering controls such as radiant heaters.

Injury and Illness Prevention

Field leaders and supervisors should review with their teams the information on cold stress illnesses and injuries and explain how to apply first aid treatment.

At a minimum, review the following and how bpx helps prevent these types of injuries and illnesses:

Cold Stress

- How to recognize the symptoms of cold stress, prevent cold stress injuries and illnesses.
- The importance of self-monitoring and monitoring coworkers for symptoms.
- First aid and how to call for additional medical assistance in an emergency.
- How to select proper clothing for cold, wet, and windy conditions.

Other winter weather-related hazards:

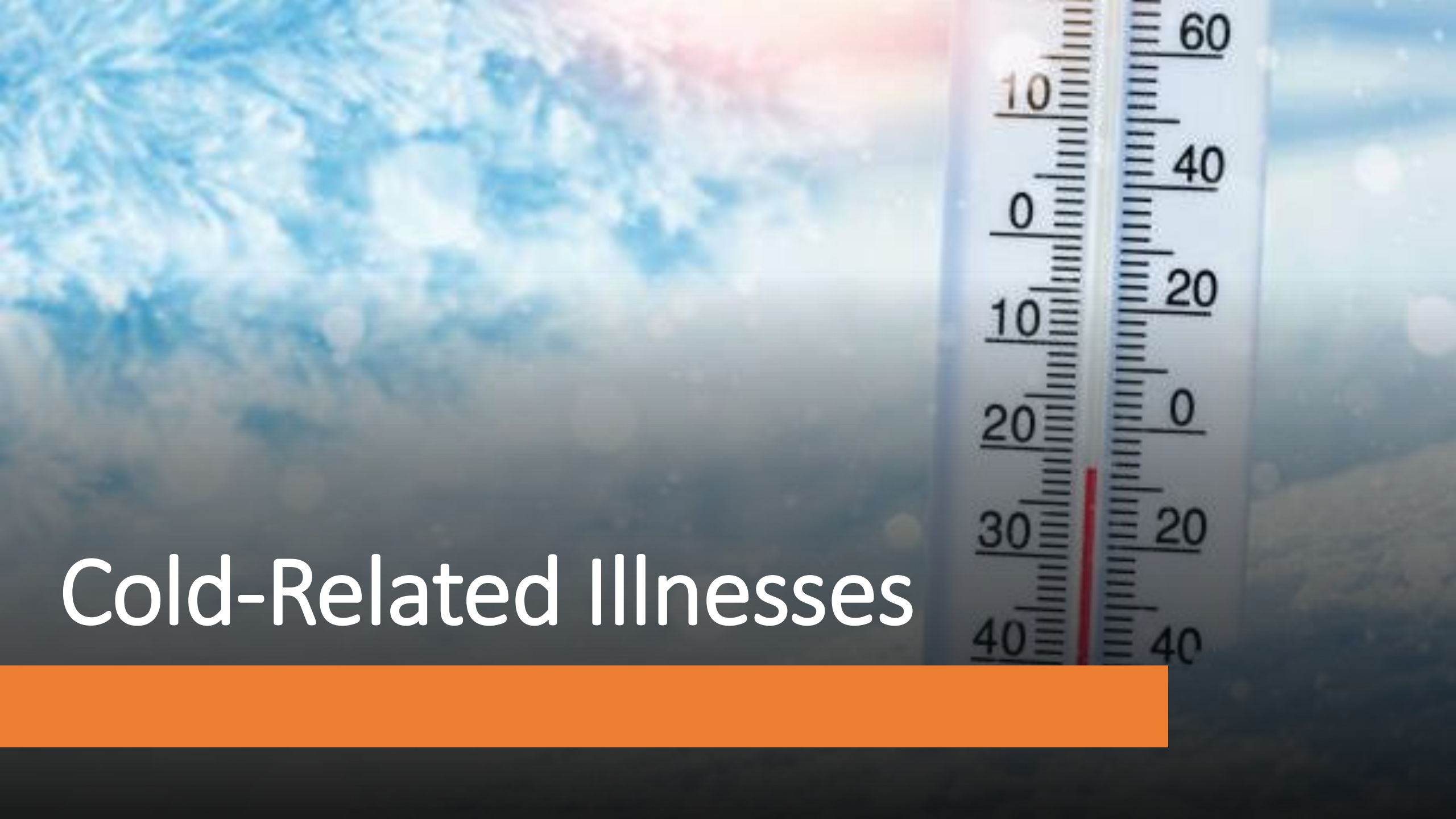
- Driving on snow/ice packed roads
- Slippery walking and working surfaces
- Windy conditions
- Downed power lines
- How workers will be protected:
  - Engineering controls,
  - Safe work practices and
  - Proper selection of equipment, including personal protective equipment.

Engineering Controls

Employers should provide engineering controls to protect workers from winter related hazards.

Examples of Engineering Controls

- Radiant heaters may be used to warm workplaces.
- Shielding of work areas from drafts or wind to reduce wind chill.



Cold-Related Illnesses

Hypothermia

Hypothermia occurs **when the normal body temperature (98.6°F) drops to less than 95°F**.

Exposure to cold temperatures causes the body to lose heat faster than it can be produced.

Prolonged exposure to cold will eventually use up the body's stored energy. The result is hypothermia, or abnormally low body temperature.

Hypothermia **is most likely at very cold temperatures, but it can occur even at cool temperatures (above 40°F) if a person becomes chilled from rain, sweat, or immersion in cold water**.

Symptoms of Hypothermia

Mild symptoms

- An exposed worker is alert.
- Victim may begin to shiver and stomp the feet in an effort to generate heat.

Moderate to severe symptoms

- As the body temperature continues to fall, symptoms will worsen, and shivering will stop.
- The victim may lose coordination and fumble with items in the hand, become confused and disoriented.
- Victim may be unable to walk or stand, pupils become dilated, pulse and breathing become slowed, and loss of consciousness can occur. A person could die if help is not received immediately.

Hypothermia

First Aid

- **Call 9-1-1 immediately in an emergency**; otherwise seek medical assistance as soon as possible.
- **Move the victim** to a warm, dry area.
- **Remove wet clothes and replace with dry clothes**, cover the body (including the head and neck) with layers of blankets; and with a vapor barrier (e.g. tarp, garbage bag). Do **not** cover the face.
- **If medical help is more than 30 minutes away**:
  - **Give, warm sweetened drinks if alert** (no alcohol), to help increase the body temperature. Never try to give a drink to an unconscious person.
  - **Place warm bottles or hot packs in armpits, sides of chest, and groin**. Call 9-1-1 for additional rewarming instructions.

If the victim is not breathing or has no pulse:

- Call 9-1-1 for emergency medical assistance immediately.
- Treat the victim as per instructions for hypothermia and do not try to give an unconscious person fluids.
- Check victim for signs of breathing and for a pulse. Check for 60 seconds.
- If after 60 seconds the victim is not breathing and does not have a pulse, trained workers may start rescue breaths for 3 minutes.
- Recheck for breathing and pulse, check for 60 seconds.
- If the victim is still not breathing and has no pulse, continue rescue breathing.
- Only start chest compressions (CPR) for hypothermia victim if the person is unresponsive and not breathing.
- Reassess victim's physical status periodically.

Trench Foot

Trench foot is a non-freezing injury of the feet caused by prolonged exposure to wet and cold conditions.

It can occur in temperatures as high as 60°F if feet are constantly wet. Injury occurs because wet feet lose heat 25-times faster than dry feet.

Trench Foot Symptoms

- Reddening skin
- Tingling
- Pain
- Swelling
- Leg cramps
- Numbness
- Blisters

First Aid

- Call 9-1-1 immediately in an emergency; otherwise seek medical assistance as soon as possible.
- Remove wet shoes/boots and wet socks.
- Dry the feet and avoid working on them.
- Keep affected feet elevated and avoid walking. Get medical attention.

Frostbite

Frostbite is an injury to the body that is caused by freezing of the skin and underlying tissues. The lower the temperature, the more quickly frostbite will occur.

Frostbite typically affects the extremities, particularly the feet and hands. Amputation may be required in severe cases.

Frostbite Symptoms

- Reddened skin develops gray/white patches
- Numbness in the affected part
- Feels firm or hard
- Blisters may occur in the affected part, in severe cases

First Aid

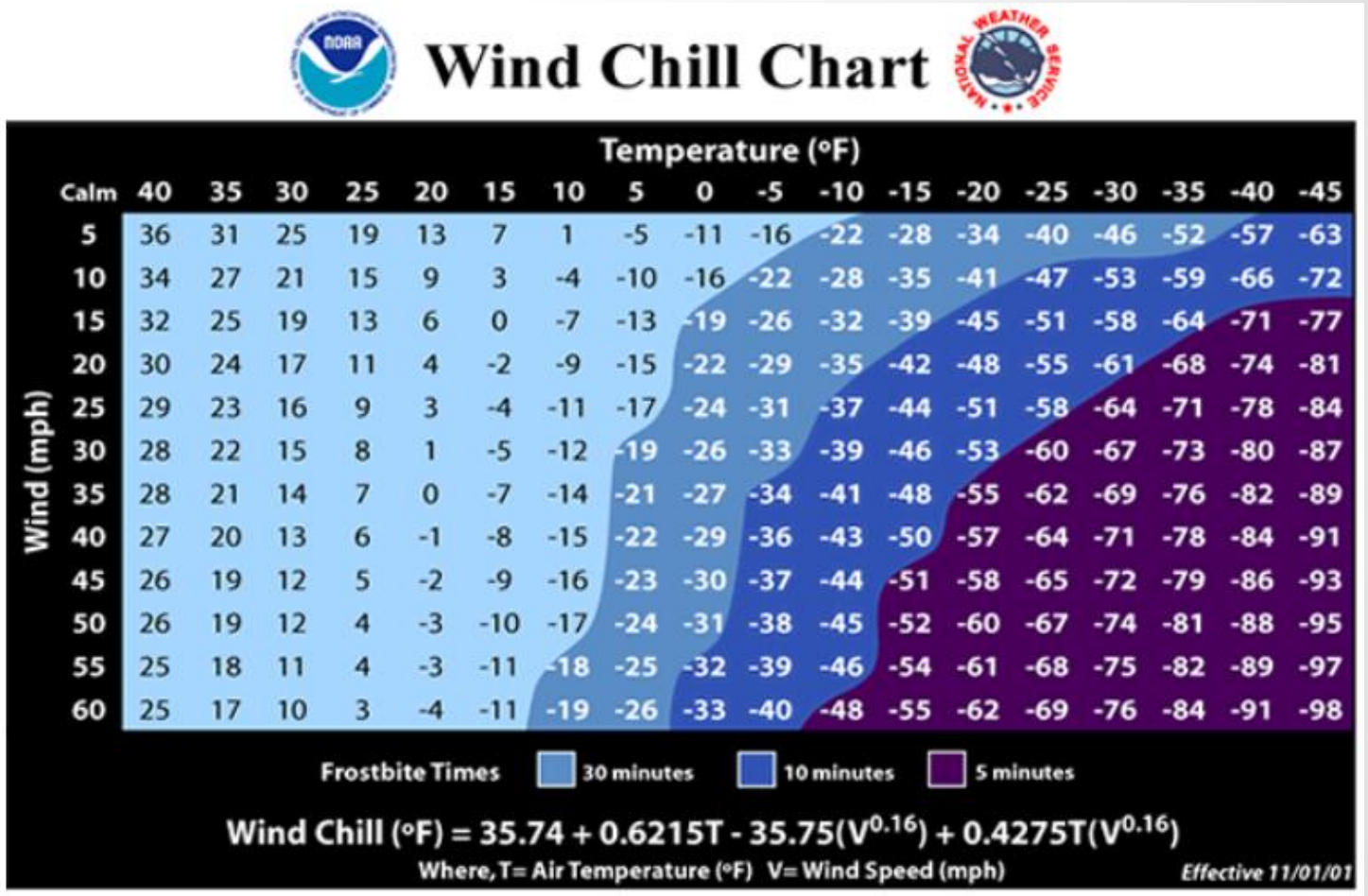
- Follow the recommendations for hypothermia.
- Do not rub the affected area to warm it because this action can cause more damage.
- Do not apply snow/water. Do not break blisters.
- Loosely cover and protect the area from contact.
- Do not try to rewarm the frostbitten area before getting medical help; for example, do not place in warm water.
    - If a frostbitten area is rewarmed and gets frozen again, more tissue damage will occur. It is safer for the frostbitten area to be rewarmed by medical professionals.
- Give warm sweetened drinks, if the person is alert. Avoid drinks with alcohol.



Cold Weather Preparation

Wind Chill Temperature Index

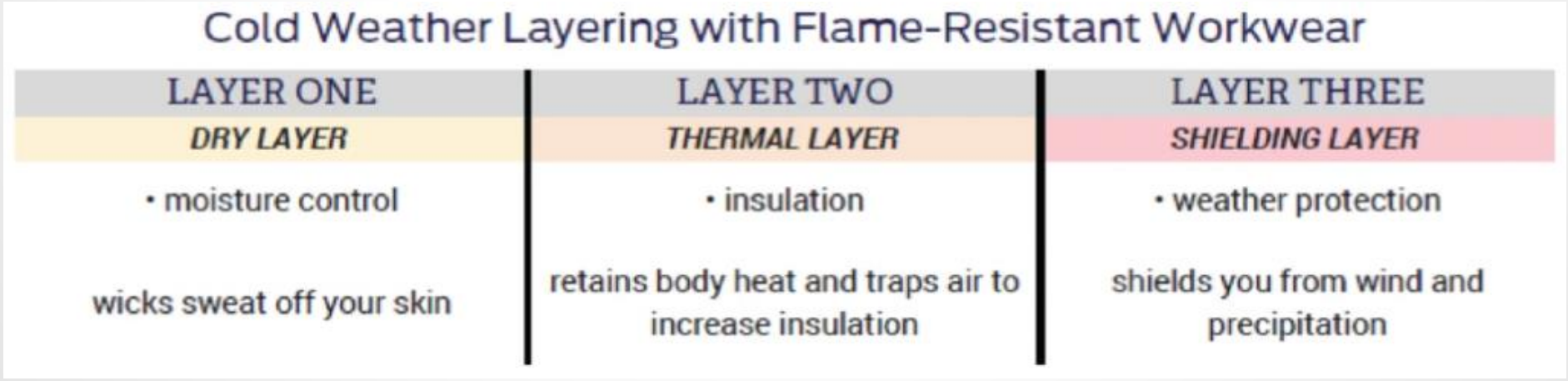
- **Outdoor workers exposed to cold and windy conditions are at risk of cold stress**, both air temperature and wind speed affect how cold they feel.
- **Wind chill is the term used to describe the rate of heat loss from the human body**, resulting from the combined effect of low air temperature, and wind speed.
- Wind chill temperature is a single value **that takes both air temperature, and wind speed into account**.
- **When the air temperature is 40°F, and the wind speed is 35mph, the wind chill temperature is 28°F**; *this measurement is the actual effect of the environmental cold on the exposed skin.*



Dressing Properly for the Cold

Dressing properly is extremely important to preventing cold stress. When cold environments or temperatures cannot be avoided, the following would help protect workers from cold stress:

- **Wear at least three layers of loose-fitting clothing. Layering provides better insulation**.
  - 1st Layer – moisture control material to keep moisture away from the body.
  - 2nd Layer – thermal insulation to retain body heat
  - 3rd Layer – shielding layer (FRC)
- **Tight clothing reduces blood circulation**. Warm blood needs to be circulated to the extremities.
- **Wear head and face coverings**.
- **Use insulated gloves** (water resistant if necessary), to protect the hands
- **Wear insulated and waterproof safety boots** to protect the feet



Injury and Illness Prevention

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- How to recognize the symptoms of cold stress, prevent cold stress injuries and illnesses.
- The importance of self-monitoring and monitoring coworkers for symptoms.
- First aid and how to call for additional medical assistance in an emergency.
- How to select proper clothing for cold, wet, and windy conditions.

Other winter weather-related hazards:

- Driving on snow/ice packed roads
- Slippery walking and working surfaces
- Windy conditions
- Downed power lines
- How workers will be protected:
  - Engineering controls,
  - Safe work practices and
  - Proper selection of equipment, including personal protective equipment.

Engineering Controls

Employers should provide engineering controls to protect workers from winter related hazards.

Examples of Engineering Controls

- Radiant heaters may be used to warm workplaces.
- Shielding of work areas from drafts or wind to reduce wind chill.

Safe Work Practices

Safe work practices that employers can implement to protect workers from cold stress injuries and illnesses include:

- **Provide workers with the proper tools and equipment** to do their jobs.
- **Develop work plans** that identify potential hazards and the safety measures that will be used to protect workers.
- **Schedule maintenance** and repair jobs **for warmer months**.
- **Schedule jobs** that expose workers to the cold weather in the **warmer part of the day**.
- **Avoid exposure** to extremely cold temperatures when possible.
- **Limit the amount of time spent** outdoors on extremely cold days.
- **Use relief workers** to assign extra workers for long, demanding jobs.
- **Provide warm areas** for use during break periods.
- **Provide warm liquids** (no alcohol) to workers.
- **Monitor workers** who are at risk of cold stress.
- **Monitor the weather conditions** during a winter storm, having a reliable means of communicating with workers and being able to stop work or evacuate when necessary.
- **Acclimatize new workers** and those returning after time away from work by gradually increasing their workload, and allowing more frequent breaks in warm areas, as they build up a tolerance for working in the cold environment.
- **Have a means of communicating with workers**, especially in remote areas.
- **Know how the community warns the public** about severe weather: outdoor sirens, radio, and television.



Outdoor Winter Safety

Winter Driving

Promote safe driving behavior by ensuring workers: 1) Recognize the hazards of winter weather driving, driving on snow/ice covered roads and 2) Ensure employees are properly trained for driving in winter weather conditions.

Vehicles should be inspected to confirm the following vehicle systems are working properly:

- **Brakes:** Brakes should provide even and balanced braking. Also check that brake fluid is at the proper level.
- **Cooling System:** Ensure a proper mixture of 50/50 antifreeze and water in the cooling system at the proper level.
- **Electrical System:** Check the ignition system, and ensure the battery is fully charged and the connections are clean. Check that the alternator belt is in good condition with proper tension.
- **Engine:** Inspect all engine systems.
- **Exhaust System:** Check exhaust for leaks and that all clamps and hangers are snug.
- **Tires:** Check for proper tread depth. Ensure no signs of damage or uneven wear. Check for proper tire inflation.
- **Oil:** Check that oil is at proper level.
- **Visibility Systems:** Inspect all exterior lights, defrosters (windshield and rear window), and wipers. Install winter windshield wipers.

Vehicle emergency kit items include the following:

- Cellphone or two-way radio
- Windshield ice scraper
- Snow brush
- Flashlight with extra batteries
- Shovel
- Tow chain
- Traction aids (bag of sand or cat litter)
- Emergency flares
- Jumper cables
- Snacks
- Water
- Road maps
- Blankets, change of clothes

Group Response: Are your vehicles equipped with proper equipment for winter driving?

Personal Reflection: Are you equipped to drive your vehicle during winter conditions?

Stranded in a Vehicle

- **Stay in the vehicle** and **call for emergency assistance** if needed.
- **Notify your supervisor** of your situation.
- **Do not leave the vehicle to search for assistance** unless help is visible within 100 yards.
  - You may become disoriented and get lost in blowing and drifting snow.
- **Display a trouble sign** by hanging a brightly colored cloth on the vehicle's radio antenna and raising the hood.
- **Turn on the vehicle's engine for about 10 minutes each hour** and run the heat to keep warm. Also, turn on the vehicle's dome light when the vehicle is running as an additional signal.
- **Beware of carbon monoxide poisoning**. Keep the exhaust pipe clear of snow and open a downwind window slightly for ventilation.
- **Avoid staying in one position for too long and watch for signs of *frostbite* and *hypothermia***.
  - Do minor exercises to maintain good blood circulation in your body. Clap hands and move arms and legs occasionally.
- **Stay awake**, so you are less vulnerable to cold-related health problems.
- Use blankets, newspapers, maps, and even the removable car mats **for added insulation**.
- **Avoid overexertion** since cold weather puts an added strain on the heart.
- Unaccustomed exercise such as shoveling snow or pushing a vehicle **can bring on a heart attack or make other medical conditions worse**.



Preventing Slips on Snow and Ice



To prevent slips, trips, and falls, employers should **clear walking and working surfaces of snow and ice, and spread deicer, as quickly as possible** after a winter storm.

The following precautions will also help reduce the likelihood of injuries:

- **Wear proper footwear** when walking on snow or ice is unavoidable, because it is especially treacherous.
- **Insulated and water-resistant boots with good rubber treads** is a must for walking during or after a winter storm.
- **Rubber over-shoes with good treads** which fit over your street shoes is a good idea during the winter months.
- **Take short steps and walk at a slower pace** so you can react quickly to a change in traction, when walking on an icy or snow-covered walkway.

Group Response: What is your local plan to prevent ice and frost build-up on walking surfaces?

Personal Reflection: How will you maintain situational awareness during winter weather?

Working Near Downed or Damaged Power Lines

Assume all power lines are energized **and stay clear of any downed or damaged power lines**.

Establish a safe distance from power lines and report any incidents to the responsible authority.

Only properly-trained electrical utility workers can handle damaged power lines.

Other potential hazards include:

- **Electrocution** by contacting downed energized power lines, or contacting objects, such as broken tree limbs, in contact with downed energized power lines.
- **Fires** caused by an energized line or equipment failure.
- **Being struck or crushed by falling tree limbs**, collapsing poles, etc.



Removing Downed Trees

Clearing downed trees is a critical job during severe winter weather conditions. It is usually urgent to remove downed trees that block public roads and damage power lines. Emergency crews are often tasked with clearing downed trees, and **bpx personnel should not do so unless specially trained**.

Potential hazards include:

- **Electrocution** by contacting downed energized power lines or contacting broken tree limbs in contact with downed energized power lines.
- **Falls from heights**.
- **Being injured by equipment** such as chain saws and chippers.

Workers should wear PPE that protects them from the hazards of the tree removal tasks. Workers using chainsaws and chippers to clear downed trees should use: gloves, chaps, foot protection, eye protection, fall protection, hearing protection and head protection.

Shoveling Snow

Shoveling snow can be a strenuous activity, particularly because cold weather can be taxing on the body. **There is a potential for**:

- Exhaustion
- Dehydration
- Back injuries or
- Heart attacks

Tips for avoiding cold stress:

- Take frequent breaks in warm areas.
- Warm-up before the activity.
- Scoop small amounts of snow at a time and where possible, push the snow instead of lifting it.

The use of proper lifting technique is necessary to avoid back and other injuries when shoveling snow:

- Keep the back straight.
- Lift with the legs.
- Do not turn or twist the body.



Portable Generator Safety

Hazards Associated with Portable Generators

- **Shocks and electrocution from improper use** of power or accidentally energizing other electrical systems.
- **Carbon monoxide poisoning** from a generator's exhaust.
- **Fires from improperly refueling a generator** or **inappropriately storing** the fuel for a generator.
- Noise and vibration hazards.



Portable Generator Safety Tips

- **Position generators outdoors** and well away from any structure.
- Keep the **generator dry**.
- **Disconnect the power** coming into your home/business.
- Make sure your generator is **properly grounded**.
- Plug equipment directly into the generator.
- **DO NOT plug the generator** into a wall outlet.
- Maintain an **adequate supply of fuel**.
- Turn the generator off and let it **cool before refueling**.
- **Inspect and maintain your generator** regularly.