

# AS COLD AS ICE?

## PROTECT YOUR WORKERS FROM WINTER WEATHER



**Winter is coming, which means you'll have to do your part to make sure your workers are safe if they have to work in cold environments for extended periods of time.** Much like with extreme heat, cold temperatures also impact employees' abilities to do their work safely. The construction, transportation, manufacturing, agriculture, and sanitation industries are just some lines of work where workers are at risk for cold stress.

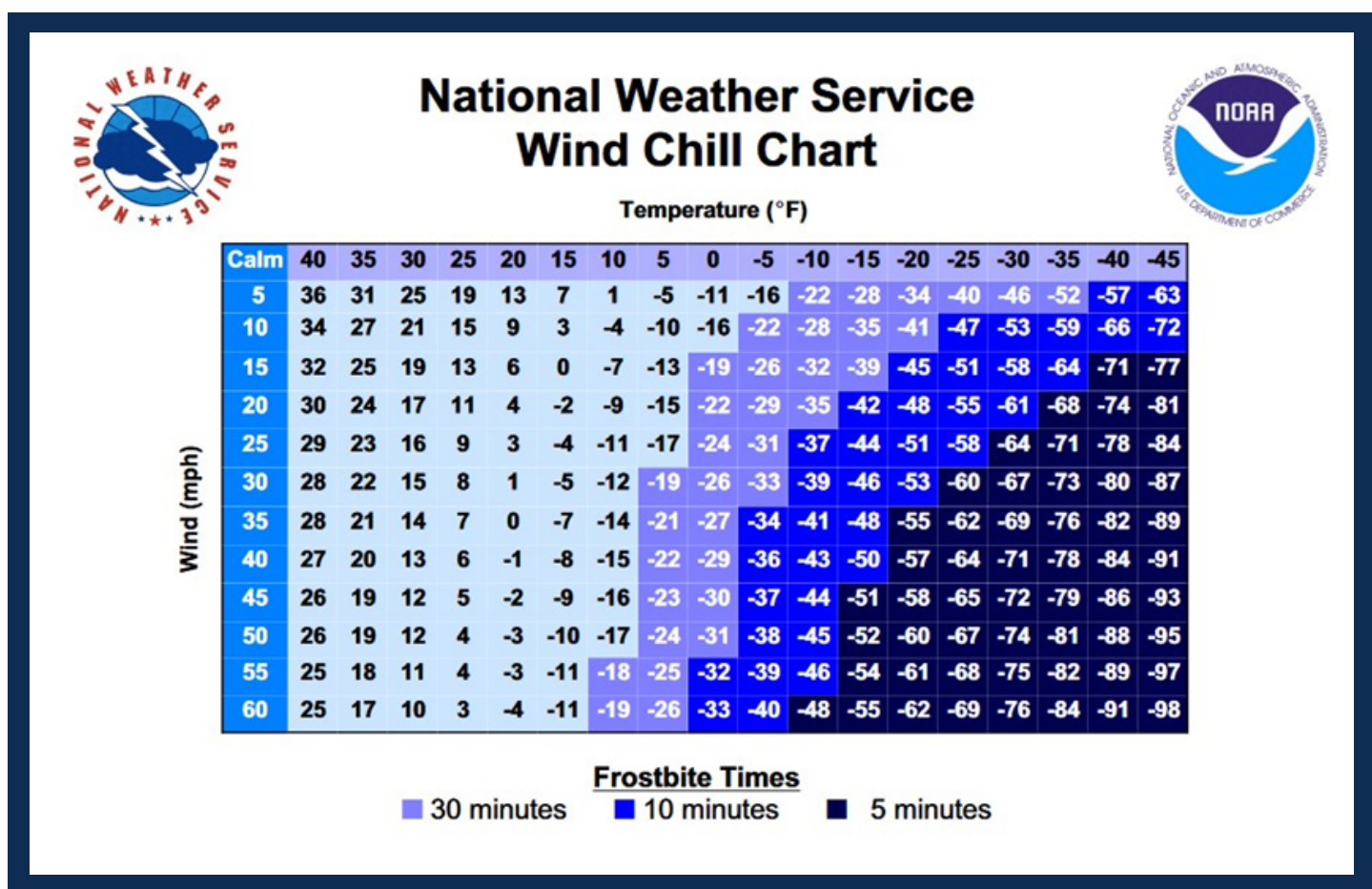
Though OSHA doesn't have a specific standard for employers to follow that covers working in cold environments, it's your moral and legal responsibility to provide a place of employment that's free from recognized hazards that can cause serious physical harm or death, and this includes cold stress. Knowing the types of cold stress, weather risks, and cold weather safety tips can help you prevent accidents this winter, and any time it gets cold.



## COLD STRESS RISK FACTORS

What constitutes extreme cold can vary greatly across the country, though there are three conditions to assess that cause cold-related stress: air temperature, wind speed, and humidity. OSHA estimates that water (yes, this includes sweat), can displace heat 25 times faster than dry air. Though most people might assume that cold stress can only happen in below freezing temperatures, it can also happen in 50°F if it's windy or raining. This is why it's important to look at wind chill when temperatures begin to drop.

Wind chill is the temperature the body feels when we combine air temperature and wind speed. Below is a chart from the National Weather Service that demonstrates how wind speed impacts what the air temperature feels on the skin.



Additional risk factors that contribute to cold stress are:

- Wetness/dampness
- Fatigue
- Improper attire
- Diabetes, hyperthyroidism, and hypertension
- Poor physical conditioning

## TYPES OF COLD STRESS






When it's cold, most of the body's energy is used to keep its internal core temperature warm. With time, blood flow will shift from extremities and outer skin to the chest and abdomen. When temperatures drop below "normal," and your body releases heat faster, this can cause physical stress. Cold stress happens when the body is unable to keep itself warm, and this may lead to illness or injuries.





Because average temperatures can vary greatly by geographic area, in regions that don't regularly see winter weather (Los Angeles and Tampa, as examples), near freezing temperatures would be considered factors for cold stress, while that might not necessarily be the case in consistently colder areas (for example, Chicago and Detroit).

## COLD WEATHER SAFETY TIPS FOR WORKERS







Though extreme cold can be a serious risk for employee safety, certain jobs require workers to be outside and brave the elements. Fortunately, there are many proactive measures you and your workers can take to stay safe.

You should encourage employees to do the following:

-  **Wear the right clothing:** Wearing several layers of loose clothing provides insulation. Wool insulates better than cotton. Wear at least three layers of clothing: an inner layer, a middle layer, and an outer layer. The inner layer should be a synthetic weave, the middle layer should be down or wool, and the outer layer should be waterproof. Avoid tight clothing if possible, as it reduces blood circulation to extremities.
-  **Protect hands, feet, ears, and face:** Wear a hat and insulated gloves. Also be sure to wear insulated, waterproof boots.
-  **Try to stay dry:** Wet or damp clothing can cause body temperature to drop, quickly. This puts people at greater risk of illness and injury.
-  **Have extra clothes on hand:** Have a change of dry clothing on hand to change into in case your clothes become wet or damp. If this happens, you should change out of wet clothes as soon as you can.
-  **Monitor physical condition:** Know the symptoms of cold stress and listen to your body for signs that you might be experiencing it so you can take care of yourself sooner rather than later.

-  **Take breaks as needed:** Scheduling frequent breaks in warm, dry areas can help prevent cold stress.
-  **Avoid skin contact with cold metal surfaces:** Touching cold metal surfaces can cause frostbite, and your skin can freeze to the metal. When you try to remove yourself from the surface, it might rip your skin.
-  **Drink warm, sweet beverages:** It's just as important to stay hydrated in cold weather as when it's hot. Warm, sweet drinks or beverages with electrolytes help nourish your body as it uses energy to keep itself warm. Avoid drinking alcohol, and if possible, don't drink caffeine as these substances cause your body to lose heat at a faster rate.
-  **Look out for one another:** Try working in pairs so that you and your coworkers can monitor each other for symptoms of cold stress and get help if needed.

In addition to encouraging workers to take precautions, as an employer, you should do the following to foster a safe working environment in cold conditions:

-  **Train workers:** Provide training about how to recognize and prevent cold stress, as well as how to administer first aid. Also train employees about which work practices and personal protective equipment can help them avoid cold stress.
-  **Engineering controls:** Consider installing radiant heaters, and if possible, shield areas of work from wind to reduce wind chill.
-  **Provide warm beverages:** Try to provide warm beverages to that workers stay hydrated and warm.
-  **Equip vehicles with emergency kits:** Keep winter safety kits in company vehicles in case of an emergency.
-  **Clear walking paths:** Avoid slips and falls by keeping walking paths clear of snow. Spread salt on paved surfaces.
-  **Schedule work, intelligently:** If possible, schedule heavy work during warmer hours of the day and allow workers to take breaks to warm up as needed. Try to assign workers in pairs so they can monitor each other for signs of cold stress.



It's your responsibility to ensure that workers are safe while on the job. Failure to do so can result in serious harm to your workers and lead to hefty insurance claims. If you need help creating a cold stress prevention and winter safety program, connect with us today. Our risk mitigation team can help you create training programs so that you to have the right measures in place to protect your business and your employees.

[Contact us today to learn more.](#)

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## LEARN ABOUT THE MOST COMMON TYPES OF COLD STRESS:

HYPOTHERMIA, FROSTBITE, & TRENCH FOOT





## HYPOTHERMIA:

Hypothermia occurs when the body temperature drops below 95 degrees Fahrenheit. When the body loses heat faster than it can produce it and it uses up its stored energy, this results in hypothermia. Though hypothermia is more likely to happen in very cold temperatures, it can also happen in warmer temperatures if a person becomes chilled from sweat, rain, or immersion in cold water.

### **The symptoms of hypothermia include:**

- Heightened alertness
- Shivering
- Loss of motor functions
- Lethargy
- Confusion
- Slurred speech
- Slowing heartrate
- Inability to walk
- Loss of consciousness

### **If someone experiences hypothermia, here's what you should do:**

- Call 911 for emergency medical assistance
- Move the person to a dry, warm area
- Remove any wet clothing and replace it with dry clothes
- Wrap the entire body in layers of blankets and a vapor barrier (tarp or garbage bag), leaving the face uncovered
- If medical help is more than 30 minutes away, give the person warm, sweetened drinks
- Never give an unconscious person a drink
- Check for signs of breathing and a pulse, and if they have no pulse communicate with 911 for direction
- Find workers trained in CPR to help in situations where someone has lost a pulse or isn't breathing

## FROSTBITE:

Frostbite is an injury that happens when the skin and underlying tissues freeze. This condition can cause permanent damage, and in extreme cases lead to amputation. People with poor blood circulation and people who aren't appropriately dressed for the cold are at increased risk for frostbite.

### **The symptoms of frostbite include:**

- Reddened skin develops gray or white patches
- Numbness in affected areas
- Skin feels firm or hard
- Skin blisters after being warmed

### **If someone experiences frostbite, here's what you should do:**

- Follow the recommendations listed above for hypothermia
- Protect the affected area by wrapping it loosely with a dry cloth until medical help arrives
- Don't apply snow or water
- Don't break any blisters that develop
- Don't rub the affected area
- Don't attempt to rewarm the affected area until medical professionals are there as this can cause more damage



## TRENCH FOOT:

Trench foot, also known as immersion foot, is a non-freezing injury of the foot caused by prolonged exposure to cold, wet conditions. It's an injury that can occur even in temperatures as high as 60°F if the feet are consistently wet and cold. Because wet feet lose heat at an exponentially higher rate than dry feet, the body begins to shut down circulation to the feet. The lack of oxygen and nutrients can cause the buildup of toxins and the skin tissue to die.

### **The symptoms of trench foot include:**

- Numbness
- Swelling Leg cramps
- Itching sensation
- Blotchy, cold, red skin
- Blistering

### **If someone experiences trench foot, here's what you should do:**

- Seek medical attention as soon as possible
- In an emergency, call 911 immediately
- Remove wet boots and socks
- Dry their feet and keep them from standing or walking
- Keep the affected feet elevated