

Cold weather

Working outside doesn't have to be hazardous

Nationwide retailer and OSHA
reach settlement agreement

When are acts of violence
considered work-related?

OSHA seeks to clarify employee
representation regulation for
inspections

Information and resources to help your employees work safely

In This Issue

Training Blueprint3

Use this outline to train employees on the hazards of cold weather.

Employee Handout — Make safety your priority during cold weather.5

Take the proper precautions to stay safe.

OSHA enters corporate-wide settlement agreement with Dollar Tree6

The company, which operates Dollar Tree and Family Dollar stores, has agreed to several corrective actions.

OSHA proposes changes to authorized employee representation during workplace inspections6

The proposed changes would clarify the regulation.

When are acts of violence considered work-related? ...7

OSHA's recent LOI gives clarity.

Expert Help: Questions of the Month7

What is cold stress?

What are the requirements for employers to protect employees from cold exposure?



MESSAGE FROM THE EDITOR

Working outside doesn't have to be hazardous

Winter weather brings more than just dropping temperatures. It can cause hazards such as slippery roads and walking surfaces, strong winds, and cold stress, particularly for workers exposed to cold environments.

What constitutes extreme cold and its effects varies across the country. Single-digit temperatures are common in places such as Minnesota and Wisconsin, whereas near-freezing temperatures are considered extreme cold in areas like Arizona and Texas.

While OSHA doesn't have a standard for working in cold environments, the General Duty Clause (Section 5(a)(1) of the Occupational Safety & Health Act of 1970) covers it. Employers have a responsibility to provide employees with a workplace free from recognized hazards, including winter weather-related hazards, that cause or can likely cause serious physical harm or death.

Employers should:

- Train employees on cold weather hazards, prevention, and first aid;
- Provide engineering controls like radiant heaters for outdoor workers;
- Offer guidance on how to dress for the cold and/or provide winter weather gear; and
- Review safe work practices with outdoor employees.

This month's Training Blueprint has an outline you can use to provide employees with information and training on cold weather hazards and precautions they can take. The Employee Handout and Quiz can be used to reinforce learning. ♦



Adriana Lucas

Adriana Lucas joined J. J. Keller & Associates, Inc. in 2023 as an Associate Editor. She researches, develops, and updates content on transportation, human resources, and environmental topics. Adriana creates and edits content for the *Environmental Regulatory Alert* and *Employee Safety Training Advisor* newsletters. She has over four years of writing and editing experience.



TRAINING BLUEPRINT — COLD WEATHER

Cold weather can kill

Work doesn't stop when temperatures drop. Outdoor workers and employees who travel on the job can benefit from some reminders on cold weather hazards and how to prepare for the upcoming winter.

Overview

Cold weather can affect any workplace. Storms bring snow, ice, and wind that make for hazardous travel conditions, cause utility outages and structural damage, and impact emergency response activities. On a personal level, exposure to cold weather can cause serious health problems. These hazards can be addressed by taking the proper precautions.

Specific Training Elements

1. Identify the types of employees affected by cold weather.

Employees in multiple industries have routine exposure to cold weather, such as workers in construction, agriculture, commercial fishing, transportation, and logging. Other workers exposed to the cold include drivers, maintenance staff, emergency responders, and utility employees. Plus, everyone who commutes to work is exposed to the weather.

TRAINER'S NOTE: Discuss how your employees are exposed to cold weather.

2. Discuss winter storm conditions.

The National Weather Service (NWS) issues watches, advisories, and warnings to keep the public informed about hazardous weather conditions.

Travel is especially dangerous during a winter storm. Highway crashes occur more often and can result in serious injuries or deaths. Even if there isn't a raging storm, a vehicle that breaks down during extremely cold temperatures can leave a motorist stranded in a life-threatening situation. Just walking in cold weather can be a problem. Many people slip and fall on icy walkways.

Staying indoors isn't always the perfect solution, though. Heavy snow and ice, strong winds, and extreme cold can cause power outages, frozen water and sewer lines, and roof collapses.

3. Introduce the wind chill temperature index.

The NWS's wind chill index provides a useful formula for communicating the potential danger from the combination

of cold temperatures and wind. As the wind increases, heat is carried away from the body at a faster rate. The wind chill chart indicates how many minutes it may take for the skin to develop frostbite.

4. Introduce the health hazards.

Exposure to cold conditions can result in harmful effects, including:

- Frostbite,
- Hypothermia, and
- Trench foot.

Many winter deaths are related to ice and snow or exposure to the cold.

5. Explain how people react to cold conditions.

In cold weather, a person's body uses about 60 percent of its fuel to heat the body. People gain body heat from food and movement. It's lost through convection (wind), conduction (contact with cold surfaces), radiation, and evaporation.

When a body's temperature drops a few degrees below its normal temperature of 98.6°F, the blood vessels constrict to reduce blood flow to the body's surface. This helps reduce heat loss and keeps the body's core warmer. Shivering generates heat by increasing the body's metabolic rate.

- Inadequate or wet clothing puts a person at increased risk.
- Alcohol, nicotine, caffeine, and certain medications can lessen the body's ability to regulate temperature or can impair a person's judgment.
- Existing health issues (like diabetes; heart, vascular, or thyroid problems; or even a cold) may make a person more susceptible to the hazards.
- The elderly are more vulnerable to winter weather's effects.
- Exhaustion and staying still speed up the effects of the cold.

6. Discuss frostbite.

Frostbite occurs when the skin and tissue beneath it freeze. It can result in hospitalization and surgery, such as amputation. Ears, fingers, toes, cheeks, and noses are the most susceptible. Symptoms include feelings of coldness; tingling, stinging, or aching sensations in the

affected area; and numbness. Frostbitten skin develops a pale, waxy-white color and becomes hard and numb.

Workers should seek immediate medical attention if they think they have frostbite. While waiting, cover the affected area with dry, sterile gauze or soft, clean bandages; don't rub the skin because it can cause greater damage; and don't try to rewarm the area unless trained in the proper procedures, and then only if medical treatment is delayed.

7. Emphasize the dangers of hypothermia.

Hypothermia happens when a person has a low body temperature and can't produce heat. This condition can occur in any climate.

As the body temperature falls to 95°F, the first symptoms that appear include shivering, fatigue, the inability to do complex movements, and mild confusion. As the body temperature continues to drop, the victim becomes increasingly dazed and unable to do simple movements. Hypothermia is most severe when the body temperature falls below 90°F, at which point the victim's heart rate, blood flow, and breathing have slowed. If the person is unresponsive and not shivering, assume he or she is suffering from severe hypothermia, which can result in unconsciousness and heart failure.

When moderate or severe hypothermia is suspected, get immediate medical attention. Move the victim to a shelter, remove wet clothing, and add layers of dry clothing, dry blankets, or a pre-warmed sleeping bag. A person suffering from mild hypothermia may be given warm fluids to drink. In mild cases or when medical treatment is delayed, use rewarming techniques like body-to-body contact in a pre-warmed sleeping bag and applying heat packs to the victim's armpits, chest, neck, and groin.

8. Describe trench foot.

Trench foot is caused by a foot's long, continuous exposure to a wet, cold environment or immersion in water. Wet feet lose heat 25 times faster than dry feet. Symptoms include a tingling or itching sensation, burning, pain, swelling, and numbness.

Employees should get medical assistance right away if they suspect they have trench foot. Move the victim to a warm, dry place. Remove the person's shoes and wet socks. Carefully wash, dry, rewarm, and slightly elevate the affected area.

9. Offer guidance on how to dress for the cold.

Insulating layers provide the best protection. Wear at least three layers, and remove them as needed to avoid wetness from perspiration and the resulting chill.



- Start with a snug inner layer that wicks sweat away from the skin and allows ventilation (use a synthetic fabric like polyester).
- The middle layer should retain its insulation value when it's wet with perspiration (use wool, heavyweight fleece, or specialized synthetic fabric). Down fill in a puffy jacket provides the best insulation only

when it's dry, but synthetic down provides consistent insulation when it's dry or wet.

- The outer layer should block the wind, repel water, and allow some ventilation (use GORE-TEX® or nylon). Make sure the outer-layer jacket is waterproof and not just water-resistant for the highest level of protection.

Also, protect your feet, hands, face, and head with insulated footwear, gloves, and a hat. Any part of your body that's exposed to cold weather is susceptible to losing body heat, and your face and head are more sensitive to changes in temperature.

TRAINER'S NOTE: Encourage trainees to keep a change of clothing available, including hats and socks, in case their work clothes get wet.

10. Discuss other ways to guard against the cold.

Shield work areas from the wind. Provide portable heaters at the jobsite, but watch for fire and burn hazards. A heated shelter should be available when the wind chill is 20°F or less.

Try to reduce outdoor activities in cold weather, and limit activities to the warmest hours of the day. Work schedules should allow time for employees to adjust to the cold over a few days. In cold conditions, employees should be able to set their own pace and take breaks when needed.

11. Review your facility's emergency action plan.

Take cold weather into account when instructing employees on how to respond to an emergency during the winter. For example, when the fire alarm sounds, employees need a safe place that will shelter them from the cold after they evacuate. If there's a medical emergency, the ambulance service may be unavailable or delayed during a winter storm. Also, prepare your facility for other cold-related problems, such as power outages, frozen water pipes, damaged roofs, and vehicles or equipment that won't start. ♦



Key to remember: Working in cold weather can be hazardous, but with the proper precautions, employees can keep themselves and each other safe.



Employee Handout — Make safety your priority during cold weather

Extreme cold in the Arizona desert may not be the same as blizzard conditions in Nebraska, but both situations can cause serious injury. Don't take cold weather lightly; permanent tissue damage and death can result if your body's unable to warm itself.

Pay attention to warnings

The National Weather Service issues watches, advisories, and warnings to keep everyone informed about hazardous weather conditions. Driving is especially dangerous during winter storms.



Plan ahead

Gather supplies before a winter storm hits, including:

- A flashlight,
- A radio,
- Extra batteries,
- First aid supplies,
- Food and water,
- Warm clothes or blankets, and
- A fire extinguisher

Stay inside during hazardous winter storms.

Winterize your vehicle. Check the battery, oil, antifreeze, windshield washer fluid, tires, etc. Keep your gas tank near full to avoid frozen fuel lines. Tell someone about your travel plans. Carry emergency supplies.

If you're caught in a storm:

- Stay in your vehicle;
- Run the motor for about ten minutes every hour for heat, but open the window for a little fresh air to avoid carbon monoxide poisoning;
- Keep the exhaust pipe clear of snow and ice; and
- Set up a signal for rescuers.

Watch for symptoms

Hypothermia occurs when the victim has a low body temperature. It can happen when land temperatures are above freezing or water temperatures are below 98.6°F. Symptoms include shivering, fatigue, the inability to do complex movements, and mild confusion. As the body cools, symptoms get worse. Hypothermia can kill, so get medical assistance right away. Take the victim to shelter, remove wet clothing, and provide dry clothing and/or blankets.

Frostbite happens when skin tissue freezes. Symptoms include feelings of coldness; tingling, stinging, or aching sensations in the affected area; and numbness. Frostbitten areas have a pale, waxy-white color and become hard and numb. Get medical attention immediately. Don't rub the skin or try to rewarm the area. Apply dry, sterile gauze or soft, clean cloth bandages. Frostbite can require hospitalization or surgery, such as amputation.

Trench foot arises when the foot is continuously exposed to a wet, cold environment or is immersed in water. Wet feet lose heat 25 times faster than dry feet. Symptoms include a tingling or itching sensation, burning, pain, swelling, and numbness. Get medical assistance, and move the victim to a warm, dry place. Carefully wash, dry, rewarm, and slightly elevate the affected area. ♦

Quiz — Make safety your priority during cold weather

For each question, circle whether the statement is **True** or **False**.

- | | | |
|--|------|-------|
| 1. First aid for frostbite includes rubbing the skin and soaking it in hot water. | True | False |
| 2. Shivering is a sign of hypothermia. | True | False |
| 3. Strong winds can make you feel colder. | True | False |
| 4. If you're stuck in a storm, leave your vehicle to look for help. | True | False |
| 5. Trench foot can occur when the foot is exposed continuously to a wet, cold environment. | True | False |

NAME: _____

DATE: _____



OSHA enters corporate-wide settlement agreement with Dollar Tree and Family Dollar

Operators of Dollar Tree, one of the nation's largest chains of discount retailers that includes Dollar Tree and Family Dollar, entered into a corporate-wide settlement agreement with OSHA after repeated violations cited at multiple stores. The agreement requires the company to:

- Conduct a comprehensive, nationwide assessment of the root causes of the violations, with a plan to identify causes and make operational changes to correct them within two years;
- Correct specific hazards within 48 hours of notification by OSHA and submit proof that the hazards were corrected (or face steep fines and inspections);
- Pay \$1.35 million in penalties to settle existing contested and open inspections of similar alleged violations;
- Institute operational changes, such as forming safety advisory groups, enhancing hazard identification and control programs, and creating a new employee training program;

- Maintain a 24-hour hotline to receive and track safety complaints; and
- Hold quarterly meetings with OSHA regarding systemic improvements. ♦



OSHA proposes changes to authorized employee representation during workplace inspections

Through proposed changes to the Representatives of Employer and Employees regulation (at 29 CFR 1903.8), OSHA seeks to clarify that employees may authorize an employee or a nonemployee third party to accompany the OSHA

Compliance Safety and Health Officer if the compliance officer determines the third party is reasonably necessary to conduct an effective and thorough inspection. The agency also wants to clarify that third-party representatives aren't limited to industrial hygienists or safety engineers, the two examples included in the current regulation at 1903.8(c).

In the proposed changes, OSHA states that third-party representatives may be reasonably necessary because they have skills, knowledge, or experience that could help inform the inspection. They may have experience with specific hazards, workplace conditions, or language skills that can improve communications between OSHA representatives and workers. ♦



When are acts of violence considered work-related?

In a letter of interpretation dated May 17, 2023, OSHA clarified when acts of violence committed against employees are considered work-related. The recordkeeping regulation at 29 CFR 1904.5(a) says that an injury or illness is work-related “if an event or exposure in the work environment either caused or contributed to the resulting condition or significantly aggravated a preexisting injury or illness” unless an exception in 1904.5(b)(2) — which doesn’t include acts of violence — applies.



Further, OSHA’s final rule in 2001 that revised its recordkeeping regulation concluded that injuries and illnesses resulting from acts of violence against employees at work are work-related under the positional theory of causation. In other words, if the assault or other harmful event wouldn’t have occurred had the employee not, as a condition of their employment, been in the position where they were injured, it’s work-related.

Therefore, employees must include on their recordkeeping forms any injuries and illnesses that result from random acts of violence that occur in the work environment. ♦

Answers to quiz on page 5:

1. False; 2. True; 3. True; 4. False; 5. True



Next Month’s Topic: Stress

Everyone experiences stress occasionally, but when it continues for long periods of time, stress can harm both your physical and mental health. Employers can help workers manage and reduce their stress levels, and studies suggest that less-stressed employees benefit the bottom line.

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Expert Help: Questions of the Month

Question: What is cold stress?

Answer: Cold stress occurs by driving down the skin temperature and, eventually, the internal body temperature (core temperature), which may lead to serious health problems and may cause tissue damage and possibly death. Anyone working in a cold environment may be at risk of cold stress, especially if they spend extended periods of time outdoors.

Question: What are the requirements for employers to protect employees from cold exposure?

Answer: OSHA doesn’t have a specific standard that covers working in cold environments, but the General Duty Clause (Section 5(a)(1) of the Occupational Safety and Health Act of 1970) requires employers to provide workers with employment and a place of employment free from recognized hazards, including winter weather-related hazards, which cause or are likely to cause death or serious physical harm.



Employers should:

- Train workers, at a minimum, on how to:
 - Prevent cold-related injuries and illnesses;
 - Dress for cold, wet, and windy conditions;
 - Recognize the symptoms of cold stress;
 - Monitor oneself and others for symptoms;
 - Perform first aid and call for medical assistance; and
 - Recognize and stay safe from other potential winter-related hazards (e.g., icy surfaces and downed power lines).
- Provide engineering controls (e.g., radiant heaters to warm workers);
- Use safe work practices (e.g., provide warm liquids to keep employees hydrated, schedule heavy work during the warmer part of the day, implement the buddy system); and
- Give workers frequent breaks in warm areas, and acclimatize new workers and those returning after time away from work. ♦



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Policyholders with as
near perfect protection,
as near perfect service
as is humanly possible,
and to do so at the
lowest possible cost.”***

***Co-founder H.O. Hirt
Our Founding Purpose***