



# 5-minute safety talk

## Working Safely in Cold Environments

Working outside in the cold for prolonged periods of time is a hazard that can lead to injury and illness if not properly addressed. Stressors include cold temperatures, high winds, dampness and contact with cold water or surfaces. The following environments are especially dangerous: rooftops; open or unheated cabs; steel structures; high buildings open to the elements; and refrigerated areas.

When a construction worker is exposed to cold environments, three significant health problems may result: frostbite, hypothermia and dehydration.

**Frostbite:** The most common cold-induced injury. It usually affects the fingers, hands, toes, feet, ears and nose.

**Superficial frostbite:** Characterized by white, waxy, or grayish-yellow patches on the affected areas. The skin feels cold and numb. The skin's surface is stiff but underlying tissue feels soft and pliable when depressed.

Treat superficial frostbite by moving the victim to a warm, dry area. Remove any constrictive clothing items that could impair circulation. Place dry, sterile gauze between toes and fingers to absorb moisture and to keep them from sticking together. Slightly elevate the affected part.

Seek medical attention as soon as possible. If you are more than one hour from a medical facility and you have warm water, place the frostbitten part in the water (102 to 106 degrees Fahrenheit). If you do not have a thermometer, test the water first to see if it is warm, not hot. Rewarming usually takes 20 to 40 minutes or until tissues soften.

**Deep frostbite:** Usually affects the feet or hands and is characterized by waxy, pale, solid skin. Blisters may appear. Treat deep frostbite by moving the victim indoors and immediately seek medical attention. Never re-warm a frostbitten body part by rubbing, exposing to open fire, rubbing with snow or cold water soaks. Never allow a re-warmed body part to re-freeze.

**Hypothermia:** Occurs when the body's temperature drops below 95 degrees Fahrenheit. Symptoms of this condition include a change in mental status, uncontrollable shivering, cool abdomen and a low core body temperature. Severe hypothermia may produce rigid muscles, dark and puffy skin, irregular heart and respiratory rates and unconsciousness.

Treat hypothermia by protecting the victim from further heat loss and calling for immediate medical attention. Move the victim out of the cold and replace wet clothing with dry clothing. Add insulation such as blankets, pillows, towels or newspapers beneath and around the victim. Be sure to cover the victim's head. If alert, provide a warm, sweet drink—avoid caffeine or alcohol.

Handle the victim gently and place in a horizontal (flat) position. Give artificial respiration or CPR (if you are trained) as needed.

**Dehydration:** Occurs when the body does not have as much water and fluids as it needs to perform its normal functions. Causes include losing too much fluid, not drinking enough water or fluids or a combination of both. In

cold environments, thirst is often suppressed and dehydration occurs when fluid intake is reduced.

Some symptoms of mild dehydration include weakness, dizziness, fatigue and dry mouth. Treat dehydration by providing the victim with a warm, sweet drink—avoid caffeine or alcohol. In severe cases, seek medical attention.

**Safety Precautions:** The following are some guidelines to help combat cold-induced hazards:

- Know the signs and symptoms of cold-induced injuries and illnesses. Be aware of proper treatment methods.
- Layer clothing to accommodate for changes in weather. Wear synthetic fabrics close to the skin. If conditions are wet, wear waterproof or water-repellent clothing (wet clothing loses 90 percent of its insulating value). Brush off snow regularly to avoid moisture.
- Drink warm, non-alcoholic, caffeine-free liquids and warm solid foods to maintain fluid levels and preserve body heat.
- Use the buddy system—work in pairs to ensure each other's safety.
- Seek shelter at regular intervals to rest and warm up. Workers showing any signs or symptoms of overexposure should immediately come out of the cold.
- Use extreme caution if you suffer from a health condition, are taking medication or are in poor physical condition. You may be at increased risk.

Visit [nsc.org/members](https://www.nsc.org/members)  
for more safety tips

