Are Your Workers Ready for Working in the Cold?



To best prepare your workers for working in cold environments (indoor and outdoor) it’s helpful for you to understand how cold conditions can affect them.

Four factors of Cold Stress

1. Air temperature – Of course as temperatures drop the air becomes cooler. A dip in temperatures, even a small drop, can put workers at risk for cold-related illnesses such as hypothermia. This is especially true when working in or being stranded in water waiting for rescue.
2. Wind speed – When the wind is blowing you feel cooler, regardless of the temperature. Even on a hot day a breeze can help cool you. When it’s cold and the wind blows the air will feel even colder on your skin. This is known as the wind chill or wind chill index – the combined effect of cold air and wind speed.
3. Humidity – Humidity is a measure of moisture in the air. Water conducts heat away from your body 25 times faster than dry air, so the higher the humidity the quicker you will cool off. This is why you can die from hypothermia if you’re in the water even when water temperature and air temperatures are relatively warm.
4. Contact with Cold Surfaces – Being in contact with cold or wet surfaces and floors is the final risk factor.

You must carefully monitor all four conditions to keep workers safe in the cold. Here’s why.

The Risks

There are four forms of cold stress-related conditions.

Condition	Description	Potential Results
Frostbite	Freezing of the extremities due to loss of blood flow	Tissue damage, amputation
Trench foot (aka immersion foot)	Injury to the feet caused by prolonged exposure of the feet to wet and cold which causes blood flow to shut down	Tissue damage, amputation
Chilblains	Exposure to cold damages blood vessels and causes ulcers or blistering of the skin	Tissue damage
Hypothermia	Body temperature drops so low that the body loses heat faster than it can replace it. Result: The body uses up all its stored energy and can no longer produce heat	Shutdown of bodily functions and systems which can cause death

Be a Better Supervisor

Understand and Explain the Danger

Our bodies must maintain a fairly constant internal temperature to function properly. If the body temperature falls too low, the blood vessels constrict, or tighten up, and it becomes harder to circulate blood throughout the body. After a while, the body shifts blood flow away from the extremities (limbs, fingers, toes, nose, etc.) and to the core (chest and abdomen). This can result in a series of dangerous and potentially fatal conditions known as cold stress.

Know Who Is at Risk

- Older workers—about 50% of all cold stress victims are 65 or older. Medical conditions and some medications can also put people at a higher risk for cold stress.
- Workers who work outdoors, including in agriculture, construction, oil and gas extraction and utilities.
- Workers who work in cold indoor environments, including refrigerated facilities in warehouse food plants and warehouses.
- Workers who work near or above water, i.e. fishermen.
- Divers and others who work in water.

Protect Employees

The key to preventing cold stress is to implement measures that ensure workers aren’t exposed to conditions that cause their core body temperature to drop below 95° F /35° C. Explain to workers what protections are available and how and when they are to be used.

1. Schedule cold work for the warmest part of the day.
2. Use radiant heaters, barriers to block the wind, and set up warm-up areas where workers can go to warm up.
3. Monitor the temperature, wind, and humidity and ensure workers are taking enough warm-up breaks.
4. Explain and enforce the use of proper cold weather clothing. Warm and dry clothing is crucial to preventing cold stress and list the items workers should wear when performing work in cold conditions, which may include:
    1. At least 3 layers of loose-fitting clothing, including:
        1. An inner layer of wool, silk or synthetic materials to insulate the body against moisture.
        2. A middle layer of wool or synthetics for insulation in case the outer layer gets wet.

- An outer layer to protect against wind and moisture and that’s ventilated to prevent overheating.

1. A hat or hood.
2. A knit mask to cover the worker’s face and mouth.
3. Insulated and water-proof gloves and boots or other footwear.
4. Know and train workers on the signs, symptoms, and first aid treatment for cold-related illnesses.