



# OOC FAST FACTS

*advancing workplace rights, safety and health, and accessibility in the legislative branch*

## HOW TO WORK SAFELY IN COLD CONDITIONS

Cold weather environments present many hazards and can be life-threatening. Cold impairs performance of complex mental tasks and reduces dexterity. Low temperatures, wind, and wetness are the three main challenges. The body loses heat through radiation, conduction, convection, and evaporation.

General warning signs and symptoms include:

- Shivering
- Fatigue
- Loss of coordination
- Decreased heart rate
- Reddening of the skin
- Tingling, stinging, or aching
- Disorientation
- Irritability
- Confusion
- Numbness

### Cold Stress

Cold stress can occur when the body is unable to warm itself. Cold stress is most often associated with outdoor workers such as builders, road workers, and police. However, indoor workers such as those working around freezers and refrigerators are at risk. Cold stress can occur at temperatures as high as 60 degrees. In fact, most cold stress injuries do not occur during extremely cold weather.

### Frostbite

Caused by freezing, frostbite most often affects the nose, ears, cheeks, chin, fingers, or toes. The key is to recognize and treat early symptoms, including: numbness, aching, tingling or stinging, and bluish, pale or waxy skin. Victims should get to a warm room as soon as possible and avoid walking on frostbitten feet. To reheat the frostbitten area, immerse in warm, but not hot, water or use body heat.

### Hypothermia

Hypothermia, which occurs after prolonged exposure to cold, is a medical emergency. The body has used up its stored energy and can no

longer produce heat. Symptoms include: loss of coordination and disorientation. In severe cases, victims may have blue skin, dilated pupils, and loss of consciousness.

To render aid, move the victim to a warm room and remove wet clothing. Warm the core of their body first, using blankets or skin-to-skin contact. If the person is conscious, warm beverages may help increase body temperature.

### Trench Foot

Trench foot typically occurs when feet are exposed to wet and cold conditions for a prolonged period of time, but it can occur at temperatures as high as 60 degrees. It ultimately can lead to gangrene. Symptoms include: reddening of the skin, numbness, swelling, cramps, blisters, and bleeding under skin. To treat, remove wet footwear, and keep feet dry.

Seek medical attention if you or co-workers experience any of these symptoms.

### Chilblains

Chilblains are caused by repeated exposure of the skin to temperatures ranging from just above freezing to 60 degrees. The condition creates ulcers from damaged blood vessels. Symptoms include redness, itching, blistering, and inflammation. To treat chilblains, slowly warm the skin, use creams to reduce itching and swelling, and keep any blisters or ulcers clean and covered.



**PREVENTION TIPS:**

Since more accidents are likely to occur during cold conditions, it is important to take preventative measures. Measures include: environmental monitoring, engineering controls, and personal protective equipment (PPE).

- **Monitor co-workers** with conversation.
- **Check weather** before and during your shift.
- When possible, **avoid the wind, work in the sun, and seek shelter** during breaks.
- Pace work to **avoid sweating**.
- **Adapt equipment**, such as covering handles with insulating material.
- **Stay hydrated**, even though you may not feel thirsty. Heavy clothing and gear, quickly evaporating sweat, and respiratory fluid lost through breathing can dehydrate the body.
- **Dress appropriately**, including gloves, coat, boots, hat, face mask, and long underwear. Take care to protect your extremities. Up to 45 percent of heat is lost through your head. When your feet are wet, you lose heat 25 times faster than when your feet are dry, so proper footwear is critical. Choose wool and synthetic fibers over cotton because they retain heat when wet.



*Photo credit: Architect of the Capitol. Information: Occupational Safety and Health Administration.*

**Work — Warm-up Schedule for a 4-hour Shift**

Air Temperature—Sunny Sky		No Noticeable Wind		5 mph Wind		10 mph Wind		15 mph Wind		20 mph Wind	
°C (approximate)	°F (approximate)	Maximum Work Period	Number of Breaks	Maximum Work Period	Number of Breaks	Maximum Work Period	Number of Breaks	Maximum Work Period	Number of Breaks	Maximum Work Period	Number of Breaks
-26 to -28	-15 to -19	(Normal Breaks ) 1		(Normal Breaks ) 1		75 min	2	55 min	3	40 min	4
-29 to -31	-20 to -24	(Normal Breaks ) 1		75 min	2	55 min	3	40 min	4	30 min	5
-32 to -34	-25 to -29	75 min	2	55 min	3	40 min	4	30 min	5	Non-emergency work should cease	
-35 to -37	-30 to -34	55 min	3	40 min	4	30 min	5	Non-emergency work should cease			
-38 to -39	-35 to -39	40 min	4	30 min	5	Non-emergency work should cease		Non-emergency work should cease		Non-emergency work should cease	
-40 to -42	-40 to -44	30 min	5	Non-emergency work should cease							
-43 & below	-45 & below	Non-emergency work should cease		Non-emergency work should cease		Non-emergency work should cease		Non-emergency work should cease		Non-emergency work should cease	

Schedule applies to any 4-hour work period with moderate to heavy work activity; with warm-up periods of ten (10) minutes in a warm location and with an extended break (e.g. lunch) at the end of the 4-hour work period in a warm location.

*Adapted from ACGIH 2012 TLVs*