

## FROM THE ISAO SAFETY COMMITTEE: COLD STRESS



Our bodies strive to maintain an internal temperature of 37°C (98.6°F). In cold weather, blood flow to our extremities decreases as our body tries to keep our core warm. Cold stress can cause tissue damage, and in extreme cases, death. The combined effect of lower temperatures and higher wind speeds (wind chill) can put our workers at risk.

### DESCRIBE the Hazards

In colder temperatures working outside can cause the following conditions:

**Frostnip:** mild frostbite where the skin freezes. Skin appears white or yellowish and may tingle or burn in that area. To treat frostnip: don't rub or apply direct heat. Instead, warm skin gradually (e.g. using a warm hand or warm water). Once warmed, don't re-expose to the cold.

**Frostbite:** both skin and underlying tissue freezes. Skin appears white and waxy and feels numb. Seek medical help: frostbite is a severe condition and can result in amputation. Avoid rubbing the area or applying direct heat. Warm the area gradually and maintain heat (hopefully under the supervision of a medical professional) using body heat or warm (not hot) water.

**Hypothermia:** core body temperature drops, caused by cold exposure for a prolonged period. Symptoms include shivering, disorientation/ confusion, blue lips/ fingers, and poor coordination. Severe symptoms include loss of consciousness and cardiac arrest. Symptoms may resemble death but proceed with treatment and request medical help immediately. Move the person carefully to shelter (indoors if

possible), remove any wet clothing gently, warm them gradually: apply body heat on their core (neck, chest, abdomen, groin), wrap them in warm covers, and if conscious give them warm, sweet drinks. Note that sudden movements can hurt the heart.

### DISCUSS Control Measures

- ◆ Wear layers. A synthetic base layer (polyester, merino wool, etc.) closest to the skin can help with moisture wicking. A waterproof outer layer can help in snow/freezing rain
- ◆ Wear warm gloves, socks, a hat, a hood and a balaclava
- ◆ Note that too tight-fitting clothing (e.g. footwear) can restrict blood flow
- ◆ If you get wet in under 2°C temperatures, change into dry clothes and check for signs of hypothermia immediately
- ◆ If you feel hot while working, open your jacket but keep hat and gloves on to protect extremities
- ◆ Eat and drink warm, high calorie drinks and foods
- ◆ Monitor temperatures closely and consider the impacts of wind: In -30°C weather with winds of 16km/h, skin can freeze within one minute
- ◆ In colder temperatures, take more frequent breaks and seek shelter in a heated area. In extreme cold, non-emergency work should stop

### DEMONSTRATE Knowledge

Ensure employees understand:

- ◆ Workplace procedures around cold weather work
- ◆ The importance of wearing appropriate clothing and layers
- ◆ Symptoms and treatment of frost nip, frost bite and hypothermia

Date: \_\_\_\_\_

Location: \_\_\_\_\_

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Presenter: \_\_\_\_\_

MEETING WAS ATTENDED BY  
(Each participant is to sign below)

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