
Cold Stress Prevention for Outdoor Workers

1.0 Objective & Intent

The objective of this Cold Stress Prevention SOP is to establish mandatory safety protocols that protect outdoor workers from cold stress injuries, including hypothermia, frostbite, and trench foot, during winter operations at cabinet and millwork manufacturing facilities. This procedure ensures compliance with WorkSafeBC regulations (OHS Guideline G7.29-2) by defining engineering controls, administrative controls, and personal protective equipment requirements to mitigate the specific risk of cold stress in outdoor work environments.

2.0 Operational Scope

This procedure applies to all personnel, including maintenance workers, yard operators, delivery drivers, and any employees required to perform tasks outdoors for 15 minutes or more when ambient temperature is below 10°C (50°F) or when wind chill factors create equivalent conditions. It covers all outdoor areas of the facility, including lumber yards, loading docks, material storage areas, and external maintenance zones. Supervisors and safety coordinators are responsible for enforcement and monitoring.

3.0 Hazard Identification & Mandatory PPE

- Hypothermia: Prolonged exposure to cold causing dangerous drop in core body temperature; risk increases with wind chill and wet clothing.
- Frostbite: Freezing of skin and underlying tissues, most commonly affecting fingers, toes, ears, and nose; can occur in temperatures below -0.5°C (31°F).
- Trench Foot: Non-freezing injury from prolonged exposure to wet and cold conditions, leading to tissue damage and infection.
- Slips and Falls: Ice and snow accumulation on walkways, loading ramps, and work surfaces increases fall risk.
- Reduced Dexterity: Cold impairs fine motor skills, increasing risk of handling errors and equipment misuse.
- Mandatory PPE: CSA-approved insulated steel-toed boots with slip-resistant soles; thermal insulated gloves (rated for -20°C or lower); windproof and waterproof outer jacket and pants; thermal base layers (wool or synthetic); insulated hard hat liner; safety glasses with anti-fog coating; high-visibility vest or jacket for low-light conditions.

4.0 Required Safety Equipment & Tools

- Portable wind chill thermometer or digital weather station for on-site temperature monitoring.
- Heated warming shelter (e.g., portable propane heater in a designated break area with CO monitor).
- Emergency cold stress first aid kit containing instant warm packs, thermal blanket, spare dry clothing, and hot beverage thermos.
- Ice melt or sand for walkway traction.
- Communication device (two-way radio or mobile phone) for emergency contact.
- Work/rest schedule chart posted in the warming shelter.

5.0 Step-by-Step Safety Procedure

1. Before any outdoor work begins, check the current ambient temperature and wind chill using the on-site weather station. If the wind chill is below -27°C (equivalent to -16°F), outdoor work must be suspended unless emergency conditions exist and additional controls are in place.
2. Don all mandatory PPE as listed in Section 3.0. Ensure base layers are dry and not cotton (cotton retains moisture and increases heat loss). Verify that gloves and boots are properly rated for the expected temperature range.
3. Notify your supervisor and at least one coworker of your outdoor work location and expected duration. Carry a communication device and confirm it is charged and functional.
4. Apply ice melt or sand to all walkways, loading ramps, and work surfaces that will be used. Inspect the area for hidden ice patches or uneven surfaces before beginning work.
5. Work in pairs or teams whenever possible. If working alone, check in with a designated contact every 30 minutes via radio or phone. If check-in is missed, initiate emergency response.
6. Take a mandatory 10-minute warm-up break in the heated shelter every hour when the wind chill is between -10°C and -27°C. For temperatures below -10°C, take a 15-minute break every 45 minutes. Use this time to change into dry clothing if any layers are wet.
7. Monitor yourself and coworkers for early signs of cold stress: shivering, numbness, confusion, slurred speech, or loss of coordination. If any symptoms appear, immediately move to the warming shelter and notify a supervisor. Do not resume work until symptoms resolve and core temperature is stable.
8. Avoid touching metal surfaces with bare skin; use insulated tools or gloves. Keep hands and feet moving to maintain circulation. Do not consume alcohol or caffeine before or during outdoor work, as they impair circulation and temperature regulation.
9. Upon completion of outdoor tasks, return to the warming shelter and remove wet clothing. Perform a self-check for any signs of frostbite (white or waxy skin, numbness) or trench foot (swelling, redness, tingling). Report any concerns to your supervisor immediately.
10. Document the outdoor work period, temperature readings, and any incidents or near-misses in the daily safety log. If a cold stress injury occurs, follow the facility's emergency response plan and complete an incident report within 24 hours.

Regulatory Disclaimer: This document is a generic safety template provided for educational and informational purposes only. It does not constitute professional engineering, legal, or regulatory compliance advice. The end-user assumes all liability for validating all safety protocols against specific machinery manufacturer manuals and local occupational health and safety regulations (e.g., WorkSafeBC, CSA standards) before deployment.