

Heat Stress Prevention Plan

1.0 Objective & Intent

The objective of this Heat Stress Prevention Plan is to establish mandatory administrative and engineering controls to protect all personnel from heat-related illnesses, including heat rash, heat cramps, heat exhaustion, and heat stroke. This SOP is designed to ensure compliance with WorkSafeBC OHS Regulation Part 4.29 (Thermal Stress) and Part 8.22 (Personal Protective Equipment) by defining clear thresholds for action, hydration schedules, work/rest cycles, and emergency response procedures. The specific risk mitigated is the acute physiological strain caused by elevated ambient temperatures, radiant heat from finishing ovens, and high humidity in enclosed millwork areas, which can lead to cognitive impairment, loss of coordination, and fatal heat stroke.

2.0 Operational Scope

This procedure applies to all personnel working in areas where the WBGT (Wet Bulb Globe Temperature) index exceeds 26°C or where environmental conditions pose a risk of heat stress. This includes, but is not limited to, the finishing department (spray booths, drying ovens), assembly areas near heat sources, warehouse spaces without climate control, and any outdoor work areas during summer months. This plan covers all employees, supervisors, contractors, and visitors who may be exposed to thermal stress conditions.

3.0 Hazard Identification & Mandatory PPE

- Heat Exhaustion: Heavy sweating, weakness, cold/clammy skin, nausea, fainting.
- Heat Stroke: Hot/red/dry skin, high body temperature (above 40°C), confusion, loss of consciousness.
- Heat Cramps: Painful muscle spasms in legs, arms, or abdomen due to electrolyte loss.
- Heat Rash: Skin irritation from blocked sweat ducts in hot, humid environments.
- Dehydration: Thirst, dry mouth, dark urine, reduced urine output, headache.
- CSA-Approved Hard Hat (if overhead hazards exist)
- Lightweight, breathable, light-coloured clothing (long sleeves recommended for sun/radiant heat)
- CSA-Approved Safety Glasses with anti-fog coating
- CSA-Approved Steel Toed Boots (non-insulated preferred)
- Cooling neck wraps or bandanas (optional but recommended)
- Sunscreen (SPF 30+ for outdoor work)

4.0 Required Safety Equipment & Tools

- WBGT (Wet Bulb Globe Temperature) monitor or heat stress meter
- Digital thermometer (for ambient temperature checks)
- Personal hydration systems (water bottles, hydration packs) with minimum 1-litre capacity per person
- Electrolyte replacement drinks (e.g., sports drinks, oral rehydration salts)
- Cooling stations (shaded or air-conditioned rest area with fans or misters)
- First aid kit with instant cold packs and oral thermometer

- Emergency communication device (radio, phone, or two-way radio)
- Ice packs or ice chest for emergency cooling
- Signage indicating heat stress zones and hydration reminders

5.0 Step-by-Step Safety Procedure

1. Before the start of each shift, the supervisor must check the WBGT index using a calibrated heat stress meter in all work areas. Record the reading on the Heat Stress Log. If WBGT exceeds 26°C, initiate the Heat Stress Plan immediately.
2. Verify that all personnel have been trained on heat stress symptoms and emergency procedures within the last 12 months. Ensure each worker has a personal water bottle and access to electrolyte drinks.
3. Establish a mandatory hydration schedule: drink 250-500 ml of water every 15-20 minutes during work in hot zones. Do not rely on thirst alone. Post hydration reminders at all entrances to hot areas.
4. Implement work/rest cycles based on WBGT readings: For WBGT 26-28°C, work 45 minutes with 15-minute rest in a cool area. For WBGT 28-30°C, work 30 minutes with 30-minute rest. For WBGT above 30°C, suspend all non-essential work and move to emergency cooling.
5. Designate a cool rest area (shaded or air-conditioned) within 30 metres of all hot work zones. Equip the area with chairs, fans, drinking water, and electrolyte drinks. Ensure the rest area is clearly marked with signage.
6. Monitor all workers for signs of heat stress every 30 minutes during active work. Use the buddy system: each worker must watch their partner for symptoms such as confusion, slurred speech, excessive sweating, or hot/dry skin. Report any concerns immediately to the supervisor.
7. If a worker shows symptoms of heat exhaustion (heavy sweating, weakness, nausea), immediately move them to the cool rest area, have them lie down with feet elevated, and provide cool water or electrolyte drink. Do not leave them unattended. If symptoms worsen or do not improve within 15 minutes, call 911.
8. If a worker shows symptoms of heat stroke (hot/red/dry skin, confusion, loss of consciousness, body temperature above 40°C), call 911 immediately. While waiting for emergency services, move the worker to a cool area, remove outer clothing, apply ice packs to armpits, groin, and neck, and fan aggressively. Do not give fluids if the worker is unconscious.
9. At the end of each shift, the supervisor must review the Heat Stress Log, document any incidents or near misses, and verify that all cooling equipment is functional for the next shift. Report any equipment failures to maintenance immediately.
10. Conduct a weekly review of the Heat Stress Plan with all affected workers. Update the plan based on seasonal changes, new heat sources, or incident investigations. Ensure all changes are communicated in writing and posted on the safety board.

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.