# Required Heat Stress Protections – Know The Laws of Your Province




The OHS laws require employers to maintain safe, healthy and reasonably comfortable thermal conditions in the workplace and protect workers from heat stress hazards. However, the extent and details vary by jurisdiction. Yukon and BC have the strictest and most technically detailed requirements; by contrast, Nova Scotia and Ontario address heat stress protection in only a general way without going into any details. In Alberta, the OHS regulations don't say anything about heat stress; the duty to safeguard workers exposed to dangerous heat and humidity is instead implied under the broad OHS Act duty to protect workers from recognized hazards not specifically mentioned in the regulations, i.e., the General Duty Clause. Here's a complete summary of the heat stress requirements of all 14 jurisdictions, including the special rules that apply only to specific industries or settings.

Go to the OHS Insider site for a comprehensive Heat Stress Compliance and Prevention Game Plan.

(Abbrev.: ACGIH TLVs = Threshold Limit Values for cold exposure required by American Conference of Government Industrial Hygienists)

# OHS Heat Stress Prevention Requirements Across Canada

## FEDERAL

### General (COHS Regs.)

- If feasible, employer must keep temperature in personal service room and food preparation area at 18°C to 29°C, as measured one metre above floor in centre of room or area (Sec. 9.9)
- Employer must ensure that temperature in a required first aid room: (a) is at least 21°C, as measured one metre above floor, when the outdoor temperature is 21°C or less; and (b) if feasible, doesn't exceed the outdoor temperature when the outdoor temperature in the shade is over 24°C (Sec. 16.10)

### Oil & Gas (Oil & Gas OSH Regs.)

- In each personal service room and food preparation area, the temperature, measured 1 m above the floor in the centre of the room or area, must be maintained at a level of no less than 18°C and, where reasonably practicable, no more than 29°C (Sec. 10.8)
- A shower room with at least one shower head for every 10 employees or portion of that number must be provided for employees who regularly perform strenuous physical work in a high temperature or high humidity (or whose bodies may be contaminated by a hazardous substance) (Sec. 10.18(1))
- If extreme temperatures could result in oil and gas employees suffering from hypothermia or hyperthermia, protection equipment suitable to protect employees from hazard must be used (Sec. 13.14)
- Required first aid rooms must be maintained, where

practicable, at a temperature of no less than 18°C and no more than 24°C, measured 1 m above the floor (Sec. 17.14(g))

### Aircraft (Aviation OHS Regs.)

- If feasible, the temperature on board an aircraft must be maintained at between 18°C and 29°C (*Aviation OHS Regs*, Sec. 7.1)
- Heat illness is among elective lessons required in standard first aid training for flight attendants (Sec. 9.5(1))

### Railways (On Board Trains OHS Regs.)

- In each on board accommodation, toilet room and food preparation area, the temperature, measured one metre above the floor in the centre of the room or area, must, if feasible, be maintained at a level of no less than 18°C and no more than 29°C (Sec. 6.9)

### Coal Mines (Coal Mining OHS Regs.)

- Barometric pressure and outdoor temperature above ground at a coal mine must be measured and recorded by a qualified person or mechanical means immediately before the start of each shift and at least once a day (Sec. 121(1))

## ALBERTA

Duty to protect against heat stress is implied part of employer's general duty to ensure, as far as reasonably practicable to do so, workers' health, safety and welfare (*OHS Act*, Sec. 3(1))

## BRITISH COLUMBIA

- Employer must ensure that temperature and humidity levels within the indoor work environment are maintained within acceptable comfort ranges, as far as is practicable (*OHS Reg*, Sec. 4.80)
- Employer must take measures to guard against thermal conditions that: (a) could cause heat stress; (b) could cause a worker's core body temperature to exceed 38°C (100°F); or (c) exceed heat stress exposure levels listed in the screening criteria of the ACGIH Standard for unacclimatized workers, factoring in workers' clothing (*OHS Reg*, Sec. 7.27)
- **Hazard Assessment & Exposure Control Plan:** If worker is or may be exposed to any of the above conditions, employer must: (a) do a heat stress assessment to determine the potential for hazardous exposure; and (b) implement a heat stress control plan that includes or provides for: (i) a statement of purpose and responsibilities; (ii) risk identification, assessment and control; (iii) education and training; (iv) any required written work procedures; (v) any applicable hygiene facilities and decontamination procedures; (vi) any required health monitoring; and (vii) any required documentation (*OHS Reg*, Sec. 7.29)
- **Controls:** If worker is or may be exposed to any of the conditions listed in Section 7.27, employer must reduce the worker's exposure so that it's below the ACGIH TLV level for heat stress exposure by: (a) implementing practicable engineering controls; or (b) if engineering controls aren't practicable, by using either: (i) acceptable administrative controls, including a work-rest cycle; or (ii) PPE providing protection equivalent to administrative controls (*OHS Reg*, Sec. 7.30)
- Employer must provide workers who are or may be exposed to any of the conditions listed in Section 7.27 an adequate supply of cool potable water close to the work area (*OHS Reg*, Sec. 7.31)
- Workers who show signs or report symptoms of heat stress

or strain must be removed from the hot environment and treated by an appropriate first aid attendant, if available, or a physician (*OHS Reg*, Sec. 7.32)

## MANITOBA

- If workplace or work process exposes a worker to conditions that may create heat stress risk, employer must implement safe work procedures and control measures to ensure that: (a) ACGIH TLVs protecting against heat stress are maintained; and (b) worker gets information, instruction and training in symptoms of and precautions to take to avoid cold stress (*WSH Reg*, Sec. 4.12)
- Employer must ensure thermal conditions, including air temperature, radiant temperature, humidity and air movement, are appropriate to nature of work being done (*WSH Reg*, Sec. 4.13)
- **Mines:** If it's not reasonably practicable to control thermal conditions that may create a risk to a safety or health at an underground workplace, the employer must, in consultation with the JHSC, develop safe work procedures to monitor thermal conditions to identify when workers could be adversely affected by heat or cold stress and when protective measures are required to adequately protect workers (*Operation of Mines Reg*, Sec. 4.25(2))

## NEW BRUNSWICK

- Employer must provide adequate shower facilities for employees who may be exposed to high levels of heat or humidity that may harm their health (*OHS General Reg*, Sec. 10(1))
- If an employee is exposed to work conditions that may present a hazard due to extreme heat or cold, employer must ensure that: (a) a competent person measures and

records thermal conditions at frequent intervals and makes the findings available to the JHSC upon request; and (b) ACGIH TLVs protecting against heat stress are maintained (*OHS General Reg*, Sec. 22)

- If an employee is exposed to work conditions that may present a hazard because of excessive heat, employer must ensure that a competent person instructs the employee in significance of symptoms of heat stress such as heat exhaustion, dehydration, heat cramps, prickly heat and heat stroke and in precautions to be taken to avoid injury from heat stress (*OHS General Reg*, Sec. 23(1))

## NEWFOUNDLAND

- Employer must ensure the thermal environment is reasonable and consistent with nature and degree of work performed, as established by ACGIH (*OHS Regs*, Sec. 44(1))
- Employer must provide appropriate and suitable monitoring equipment if the workplace thermal environment is likely to pose a hazard to a worker (*OHS Regs*, Sec. 44(2))
- Employer must make further provision for health, safety and reasonable thermal comfort under unusually hot or cold working conditions, which may include: (a) regular monitoring, posting of warning devices and additional first aid measures; (b) providing special equipment and clothing; (c) providing screens or shelters; (d) medical supervision, hot or cold drinks and acclimatization procedures; (e) limited work schedules with rest periods; and (f) other appropriate controls (*OHS Regs*, Sec. 44(3))

## NOVA SCOTIA

Employer must maintain ACGIH TLVs protecting against heat stress exposure (*WHS Regs*, Sec. 2.3(h))

## ONTARIO

- Duty to protect against heat stress is implied part of employer's general duty to take every precaution reasonable in the circumstances for the protection of a worker (*OHS Act*, Sec. 25(2)(h))
- **Healthcare:** If it's not practical to maintain the temperature of an enclosed workplace as required by Sec. 21(1)(c), the employer must, in consultation with the JHSC or health and safety representative, develop, maintain and put into effect measures and procedures to ensure that a worker isn't exposed to dangerous heat stress conditions (*Health Care & Residential Facils. Regs*, Sec. 21(3))
- **Mines:** Employer at a mine or mining plant must, in consultation with the JHSC or health and safety representative, develop and maintain written procedures for managing the hazards associated with heat stress and cold stress in the workplace (*Mines & Mining Plants Regs*, Sec. 254)
- While not specifically addressed in OHS Regulations, Ontario Ministry of Labour guidelines indicate that employers must maintain ACGIH TLVs protecting against heat stress exposure

## PRINCE EDWARD ISLAND

Employer must maintain ACGIH TLVs protecting against heat stress exposure (*OHS Act General Regs*, Sec. 42.1)

## QUÉBEC

- **Measurements:** In any establishment employing 50 or more workers and where workers are exposed to heat stress conditions in which the heat stress index reaches or exceeds the continuous work curve in the graph in Schedule V, this index must be measured using the Wet BulbGlobe Temperature Index (WBGT method) every summer and at least once more at a different time of year, at each work station where the index is reached or exceeded; measurement results must be entered into a register and kept for at least 5 years (*OHS Regs*, Sec. 121)
- If measurements show that workers are exposed to heat stress conditions such that the heat stress index exceeds the continuous work curve in the graph in Schedule V, the employer must ensure that exposed workers undergo medical supervision and provide them water at a temperature of between 10°C and 15°C, and one shower facility per 15 exposed workers (*OHS Regs*, Sec. 123)
- In any establishment where workers are exposed to heat stress conditions such that the heat stress index exceeds the continuous work curve in the graph in Schedule V, the following measures must be taken: (a) if possible, re-equipping the exposed work station with reflecting screens, additional insulation or ventilation to reduce the heat stress index of the work station to a value less than or equal to the values of the continuous work curve; (b) if the above isn’t possible or doesn’t allow the continuous work curve to be reached, controlling the work load, the time of exposure and the rest time in accordance with the alternate work-rest regimen prescribed for that purpose in Schedule V; and (c) if (a) and (b) are impossible or don’t allow the continuous work curves indicated in the graph in Schedule V to be reached or while waiting for the

alterations required under paragraph (a) to be done, ensuring that the workers wear appropriate individual equipment in accordance with the nature of the heat stress (*OHS Regs*, Sec. 124)

- **Construction:** Employer must provide a changing room to workers working in an underground work site or who must wear specific clothing, used exclusively for work carried out in heat stress that exceeds the continuous work curve in the "Permissible heat exposure limit values" graph in Schedule V to the OHS Regulation (*Safety Code for Const.*, Secs. 3.2.10(4) and 3.2.14(4))

## SASKATCHEWAN

- Employer, contractor or owner must maintain thermal conditions in an indoor place of employment, including air temperature, radiant temperature, humidity and air movement, that: i. are appropriate to nature of work performed; ii. provide effective protection for workers' health and safety; and iii. provide workers reasonable thermal comfort (*OHS Regs*, 6-7(1))
- If thermal environment of indoor place of employment is likely to raise health or safety concerns, employer, contractor or owner must provide and maintain an appropriate and suitably located instrument for measuring thermal conditions (*OHS Regs*, 6-7(2))
- If it's not reasonably practicable to control indoor thermal conditions or work is done outdoors, employer, contractor or owner must take measures for the effective protection and reasonable thermal comfort of workers, which may include but aren't limited to: (a) frequent monitoring of thermal conditions; (b) provision of special or temporary equipment, including screens, shelters and temporary heating or cooling equipment; (c) provision of suitable clothing or personal protective equipment; (d) provision of hot or cold drinks; (e)

acclimatization or other physiological procedures; (f) limited work schedules with rest and recovery periods, changes in workloads, changes in hours or other work arrangements; (g) frequent observation of workers by a person trained to recognize symptoms of physiological stress resulting from extreme temperatures; and (h) provision of emergency supplies for use when travelling under extremely cold or inclement weather conditions (*OHS Regs*, 6-7(3) and(4))

- If a worker is required to work in thermal conditions that are different from those associated with the worker's normal duties, employer or contractor must provide, and require the worker to use, any suitable clothing or other PPE necessary to protect the worker's health and safety (*OHS Regs*, Sec. 6-7(5))

## NORTHWEST TERRITORIES AND NUNAVUT

- Employer at an indoor work site must provide and maintain thermal conditions, including air temperature, radiant temperature, humidity and air movement, that: (a) are appropriate to nature of work performed; (b) provide effective protection for workers' health and safety; and (c) provide workers reasonable thermal comfort (*OHS Regs*, Sec. 74(1))
- If thermal environment of an indoor work site is likely to raise health or safety concerns, employer must provide and maintain an appropriate and suitably located instrument for measuring thermal conditions (*OHS Regs*, Sec. 74(2))
- If it's not reasonably possible to control thermal conditions or work is done outdoors, employer must take measures to ensure thermal conditions that are safe, healthy and reasonably comfortable (*OHS Regs*, Sec. 74(3))
- Employer must provide and require workers to use PPE or

suitable clothing, if workers are required or permitted to work in thermal conditions that are different from their normal duties (*OHS Regs*, Sec. 74(4))

## YUKON

- Employer must provide and maintain in every indoor place of employment thermal condition, including air temperature, radiant temperature, humidity and air movement, that are reasonable and appropriate to the nature of the work performed ( *Health Regs*., Sec. 9(1))
- At every indoor place of employment where the thermal environment is likely to be of discomfort or danger to workers, employer must provide an appropriate and suitably located instrument for measuring thermal conditions ( *Health Regs*., Sec. 9(2))
- If it's not reasonably practicable to control thermal conditions in accordance with Sec. 9(1) or the work is being performed outdoors, the employer must provide effective protection for the health and safety and reasonable thermal comfort of workers, which may include: (a) frequent monitoring of thermal conditions; (b) special or temporary equipment such as screens, shelters and temporary heating or cooling equipment; (c) special clothing or personal protective equipment; (d) hot or cold drinks, acclimatization or other physiological procedures; (e) limited work schedules with rest and recovery periods, changes in workloads, changes in hours or other arrangements for work; and (f) any other appropriate measure ( *Health Regs*., Sec. 9(3))
- Where hot environment work conditions may cause heat disorders in workers employed in such conditions, the employer must determine and record the thermal index using either:
    - Wet Globe Temperature (WGT); or
    - Wet Bulb Globe Temperature (WBGT) according to the

formula: INDOOR OR OUTDOOR WITHOUT SOLAR LOAD: WBGT = 0.7WB + 0.3GT OUTDOOR WITH SOLAR LOAD: WBGT = 0.7WB + 0.2GT + 0.1.DB WHERE: WB = natural wet-bulb temperature DB = dry-bulb temperature GT = globe thermometer temperature, WHERE:

- WB = natural wet-bulb temperature
- DB = dry-bulb temperature
- GT = globe thermometer temperature ( *Health Regs*., Sec. 12(1))

- Workers may not be exposed above the WGT or WBGT limits for Light, Moderate and Heavy Work set out in the chart in Section 12(2) of the Regulation ( *Health Regs*., Sec. 12(2))
- If the thermal index exceeds the levels in Section 12(2), the employer must: (a) implement engineering methods to reduce the thermal index or isolate the worker from the source of heat; or (b) implement work-rest regimes so that the thermal index averaged over the hottest 2-hour period is below that listed in Section 12(2); (c) ensure that the worker is wearing appropriate protective clothing; or (d) implement a combination of (a), (b) and (c) ( *Health Regs*., Sec. 12(3))
- If workers are exposed to hot work conditions, the employer must: (a) instruct them in recognition of symptoms of heat disorders including heat exhaustion, dehydration, heat cramps, prickly-heat and heat stroke; and (b) provide an adequate supply of potable water and salt supplement or a 0.1% to 0.2% saline drinking solution ( *Health Regs*., Sec. 12(4))