



## **Working in Hot Conditions Standard**

### **1.0 PURPOSE**

This standard supports to the Occupational & Industrial Hygiene Policy and specifies the requirements for the SaskPower Working in Hot Conditions Plan.

### **2.0 DEFINITIONS**

#### **2.1 Heat Stress**

Any set of environmental and workload conditions, which places excessive demands on the normal regulation of body temperature.

#### **2.2 Heat Strain**

A physiological reaction to hot stress that can manifest itself in a variety of heat disorders.

### **3.0 METHOD / PRACTICE**

All normal work will be performed within OH&S Hot Conditions Guidelines and in compliance with Saskatchewan Occupational Health & Safety legislation.

A Working in Hot Conditions plan begins with the identification and assessment of heat exposure hazards in the workplace and providing appropriate controls.

#### **3.1 Identifying Heat Exposure Hazards**

- All tasks, assignments and circumstances where heat exposure hazards exist shall be identified via documented hazard identification and risk assessment.

#### **3.2 Heat Exposure Control methods**

- Where practicable heat exposure hazards shall be removed. Where heat exposure hazards cannot be removed controls shall be used to reduce exposure.
  - Engineering Controls are the preferred controls where practicable and include:
    - Equipment Design such as covering hot surfaces with thermal insulating material
    - Cooling Systems
  - Administrative Controls include:
    - Using additional employees for the job.
    - Ensuring that all employees and supervisors understand the signs and symptoms of heat exposure.
    - Rotating employees into tasks and areas which expose them less to hot conditions.
    - Pace the work to avoid overheating.
    - Acclimatization – allow employees enough time to get acclimatized to heat before assuming a full work load.
    - Cool Down Breaks – increasing the frequency and duration of cool down breaks according to OH & S Hot Condition guidelines. (Exhibit A)
  - PPE shall be used where engineering and administration controls do not effectively reduce the heat exposure hazard:
    - PPE shall be selected where hazard identification and risk assessment identify the requirement.
    - PPE shall be flame resistance and/or high visibility where hazard identification and risk assessment identify the requirement.



It is preferable to establish layers of protection by combining the three control types.

### **3.3 Training**

Ru's shall provide information on the Working in Hot Conditions plan that includes:

- Hazards, signs and symptoms of heat exposure.
- Selection, use and maintenance of PPE.
- Personal controls for working in heat conditions.
- The use of tables and guidelines that determine work requirements in hot conditions.
- Emergency supplies and equipment when required.

### **4.0 REFERENCE**

- *The Saskatchewan Occupational Health and Safety Regulations, 1996.*
  - Part III General Duties Section 12 – General Duties of Employers.
  - Part VI General Health Requirements Section 70 - Thermal Conditions Section 70
  - Saskatchewan Health & Safety Publication – Hot Conditions Guidelines
  - Saskatchewan Health & Safety Publication – Working Under Hot Conditions
- SaskPower (located on SafetyNet)
  - Safety Rulebook
  - SaskPower PPE Policy
  - Job Hazard Assessment Policy
  - Hazard and Risk Assessment Standard
  - SaskPower work Warm Up Chart - Windchill
- Relevant 3<sup>rd</sup> party standards



## EXHIBIT A: Recommended Rest Break Schedules - OH & S Guidelines

The wet bulb globe (**WBGT**) index combines air temperature, humidity, air flow and radiant heat to measure the risk of heat stress disorders. In general, WBGT indices are substantially below simple thermometer readings. For example, a 26.1°C WBGT could roughly be equivalent to an outdoor temperature of 35°C in the sun and 36.7°C in the shade. A WBGT must always be used to measure extreme conditions. The **Botsball** (or wet globe thermometer) can also be used to evaluate hot conditions. Botsball readings are based on the WBGT index. A Botsball should not be used in environments with very low humidity and/or with high radiant heat.

### Wet Bulb Globe Temperature (WBGT) Index

Work Load	Work Rate			
	Continuous Work up to	15 minutes rest per hour	30 minutes rest per hour	45 minutes rest per hour
Heavy	25.0°C	25.0°C to 26.0°C	26.0°C to 28.0°C	28.0°C to 30.0°C
Moderate	27.0°C	27.0°C to 28.0°C	28.0°C to 29.0°C	29.0°C to 31.0°C
Light	30.0°C	30.0°C to 30.6°C	30.6°C to 31.4°C	31.4°C to 32.2°C

### Botsball Index

Work Load	Work Rate			
	Continuous Work up to	15 minutes rest per hour	30 minutes rest per hour	45 minutes rest per hour
Heavy	<23.0°C	23.0°C to 24.0°C	24.0°C to 25.0°C	25.0°C to 27.0°C
Moderate	<24.5°C	24.5°C to 25.5°C	25.5°C to 26.5°C	26.5°C to 27.5°C
Light	<27.0°C	27.0°C to 27.5°C	27.5°C to 28.0°C	28.0°C to 28.5°C

### Notes and Definitions

- These indices are not equivalent to regular thermometer readings. The tables apply only to acclimatized workers without special needs who are wearing lightweight, light coloured, loose-fitting cotton clothing. Adjustments must be made to these indices for workers with special needs.
- **Heavy work means** - Intermittent lifting, pushing or pulling (such as pick and shovel work) or hard sustained work.
- **Moderate work means** - (1) Work done in a sitting position, but requiring heavy arm and leg motions; or (2) work done while standing and involving moderate work at a machine or bench; or (3) work done while walking about and involving moderate lifting or pushing activities.
- **Light work means** - Sitting or standing; work at a machine or bench that requires mostly arm work.
- **Continuous work** - Assumes that there are short morning and afternoon breaks and a longer lunch break in an eight hour day.
- **Rest breaks** - Includes all breaks, such as regular work breaks and unscheduled pauses during work. If rest breaks occur in an area that is significantly cooler than the work position, the WBGT is modified.