



Working in Cold Conditions Standard

1.0 PURPOSE

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

2.0 DEFINITIONS

2.1 Wind chill

Refers to the combined chilling effects of wind and temperatures on humans.

3.0 METHOD / PRACTICE

All work will be performed within the OH & S Cold Condition Guidelines and in compliance with Saskatchewan Occupational Health & Safety legislation. (Exhibit A – Work Warm Up Chart – Wind chill)

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

3.1 Identifying Cold Exposure Hazards

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

3.2 Cold Exposure Control methods

- Where practicable cold exposure hazards shall be removed. Where cold 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 metal handles/bars with thermal insulating material or designing machines and tools so that they can be operated without having to remove mittens or gloves.
 - Heating Systems
 - Administrative Controls include:
 - Using additional employees for the job.
 - Ensuring that all employees and supervisors understand the signs and symptoms of cold exposure.
 - Rotating employees into tasks and areas which expose them less to cold conditions.
 - Pace the work to avoid sweating.
 - Acclimatization – allow employees enough time to get acclimatized to cold and protective clothing before assuming a full work load.
 - Warm Up Breaks – increasing the frequency and duration of warm up rest according to OH & S Cold Condition guidelines
 - PPE shall be used where engineering and administration controls do not effectively reduce the cold exposure hazard:
 - Appropriate winter wear shall be worn where hazard identification and risk assessment identify the requirement.
 - Winter wear 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 Cold Conditions plan that includes:

- Hazards, signs and symptoms of cold exposure.
- Selection, use and maintenance of PPE and winter wear.
- Personal controls for working in cold conditions.
- The use of tables and guidelines that determine work requirements in cold 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 – Cold Conditions Guidelines
 - Environment Canada Wind Chill Calculation Chart
- 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 3rd party standards



SaskPower Work Warm Up Chart – Windchill

This chart contains the windchill values that correlate with the OH & S on page 2.

Sunny sky			Sunny sky			Sunny sky		
Wind	16 km/h (10 mph)		Wind	24 km/h (15 mph)		Wind	32 km/h (20 mph)	
°C	Max. work period	Number of breaks	°C	Max. work period	Number of breaks	°C	Max. work period	Number of breaks
Wind Chill below zero			Wind Chill below zero			Wind Chill below zero		
37 to 39	75 minutes	2	39 to 42	55 minutes	3	41 to 43	40 minutes	4
41 to 43	55 minutes	3	43 to 45	40 minutes	4	45 to 47	30 minutes	5
44 to 47	40 minutes	4	47 to 49	30 minutes	5	49 and below	Non-emergency work should stop	
48 to 50	30 minutes	5	51 and below	Non-emergency work should stop				
51 and below	Non-emergency work should stop							



Work Warm Up Chart – OH & S Guidelines

The Work Warm-Up Schedule shows the warm-up breaks needed for work in cold conditions. It assumes that normal work practice provides for breaks in warm locations every two hours.

Warm-up breaks should begin when the temperature reaches -26° C (-15°F) with winds of 16km/h (10mph) or greater. In winter, Environment Canada reports Wind Chill Factors and/or Equivalent Temperatures. If only this information is available, warm-up breaks should begin when the wind chill reaches 1750 watts per square metre (Equivalent Temperature of -32° C). All non-emergency work should stop by the time the wind chill reaches 2250 (Equivalent Temperature of -51° C)

Work Warm-up Schedule for Outdoor Activities

This information applies to any four-hour period.
Warm-up breaks are assumed to provide 10 minutes in a warm environment.
These guidelines apply to workers wearing dry clothing.

Sunny sky		No noticeable wind		Wind 8 km/h (5 mph)		Wind 16 km/h (10 mph)		Wind 24 km/h (15 mph)		Wind 32 km/h (20 mph)	
Air temperature		Max. work period	Number of breaks	Max. work period	Number of breaks	Max. work period	Number of breaks	Max. work period	Number of breaks	Max. work period	Number of breaks
°C	°F										
below zero*	below zero*										
26 to 28	15 to 19	normal breaks	1	normal breaks	1	75 minutes	2	55 minutes	3	40 minutes	4
29 to 31	20 to 24	normal breaks	1	75 minutes	2	55 minutes	3	40 minutes	4	30 minutes	5
32 to 34	25 to 29	75 minutes	2	55 minutes	3	40 minutes	4	30 minutes	5	Non-emergency work should stop	
35 to 37	30 to 34	55 minutes	3	40 minutes	4	30 minutes	5	Non-emergency work should stop			
38 to 39	35 to 39	40 minutes	4	30 minutes	5	Non-emergency work should stop		Non-emergency work should stop			
40 to 42	40 to 44	30 minutes	5	Non-emergency work should stop		Non-emergency work should stop		Non-emergency work should stop			
43 and below	45 and below	Non-emergency work should stop		Non-emergency work should stop		Non-emergency work should stop		Non-emergency work should stop		Non-emergency work should stop	

* all temperatures are approximate

Apply the schedule one step lower for work with limited physical activity. For example, at -35°C (-30°F) with no noticeable wind, a worker with a job requiring little physical movement should have a maximum work period of 40 minutes with four breaks in a four-hour period.

