



SARNIA REFINERY

COLD STRESS CONTROL

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STANDARD

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SCOPE AND PURPOSE:

This standard defines the controls to reduce the risk of cold stress.

ROLES AND RESPONSIBILITIES:

The **Occupational Hygienist** is accountable to provide support, as necessary to ensure appropriate control of worker exposure to cold stress and conformance to this Standard.

Workers and Supervisors are accountable to evaluate their work tasks for the potential risk of cold stress and implement necessary controls to prevent cold related illness or injury.

Workers are accountable to report to the Health Centre any physical or medical conditions that increase their vulnerability to cold related illness or injury.

The **Occupational Health Nurse** is accountable to notify Supervisors, as appropriate, of a worker's increased vulnerability to cold related illness or injury.

GUIDANCE AND STANDARDS:

When work must be performed in a cold environment:

- Adequate whole-body insulating dry clothing should be worn. (Note: Layering provides better insulation).
- Cold protective clothing should be selected according to the level of cold and physical activity.
- If the worker's clothing is likely to become wet during work:
 - For light work - clothing should be impermeable to water; and
 - For moderate to heavy work – clothing should be water repellent, breathable and changed as it becomes wetted.

- Workers should remain hydrated by regular consumption of water and/or warm sweet drinks.
- Long periods of sitting or standing still should be minimized.
- Regular and warm-up breaks should be taken in warm/temperature controlled areas.
- Signs and symptoms of cold related illness and/or injury must be reported to the Supervisor.

A work/warm-up schedule for each 4-hour work period must be followed in accordance with the following table provided by the American Conference of Governmental Industrial Hygienists:

Table 1 – Work/Warm-Up Schedule Table

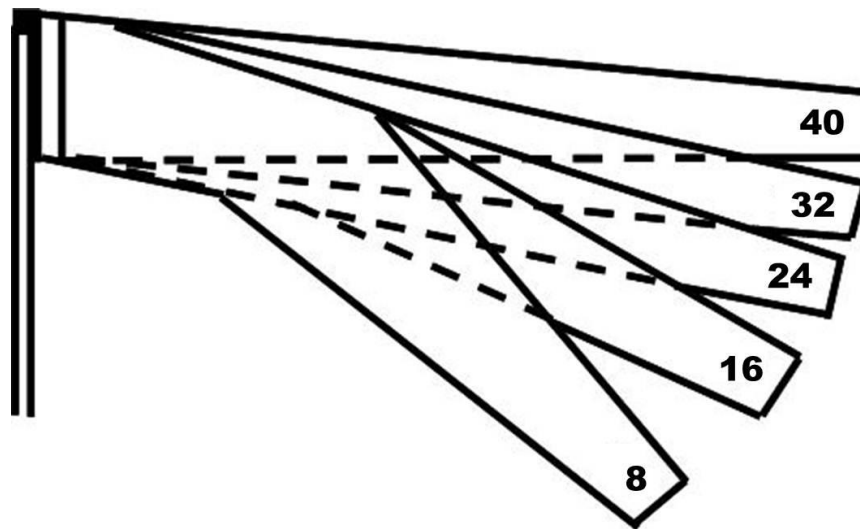
Air Temp (°C)	Calm Air		8km/hr Wind		16km/hr Wind		24km/hr Wind		32km/hr Wind	
	Max Work Period	# of Breaks	Max Work Period	# of Breaks	Max Work Period	# of Breaks	Max Work Period	# of Breaks	Max Work Period	# of Breaks
-26 to -28	Normal	1	Normal	1	75min	2	55min	3	40min	4
-29 to -31	Normal	1	75min	2	55min	3	40min	4	30min	5
-32 to -34	75min	2	55min	3	40min	4	30min	5	★ ↓	
-35 to -37	55min	3	40min	4	30min	5	★			
-38 to -39	40min	4	30min	5	★					
-40 to -42	30min	5	★							
-43 & below	★		↓		↓		↓		↓	

★ Non-emergency work should cease.

Notes for Table 1:

- This table applies to any 4-hour work period with moderate to heavy work activity and warm-up periods of 10 minutes in a warm location and an extended break (e.g., lunch) at the end of the 4-hour work period also in a warm location.
- For light work activity with limited physical movement, apply the schedule one step lower in the table.
- Wind socks can be used to estimate wind speed using the diagram in Figure 1 below.

Figure 1 – Wind Sock Wind Speed Indication (km/hr)



DEFINITIONS:

Cold Stress	The response of the body to cold temperatures resulting from heat loss from a portion of the body.
Cold Related Illness	A decrease in core body temperature, to the point where normal muscle and brain functions are impaired (i.e., hypothermia).
Cold Related Injury	The cooling of body tissues that result in injuries to the exposed part (i.e., chilblain, trench foot, frostnip, frostbite).
Light Work	Sitting with light manual hand/arm work, driving, standing with some light arm work and occasional walking.
Moderate Work	Sustained moderate hand/arm work, moderate arm/leg/trunk work, light pushing/pulling, normal walking.
Heavy Work	Intense arm and trunk work, carrying, shoveling, manual sawing, pushing/pulling heavy loads, walking at a fast pace.

END OF STANDARD

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REVISION LOG

Date MM/DD/YYYY	Revision	Section	Comment
12/03/2014	Original		New Standard. Added Livelink number to header. eSign page lost due to Edit. Approved by Peter Lynch. (M. Courteaux)
08/26/2019			Reviewed with no changes made. M. Chipman

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