



**Western
Stevedoring**
A Western Group Enterprise

Heat Stress Program

Version 1.1

August 2023

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1. Purpose

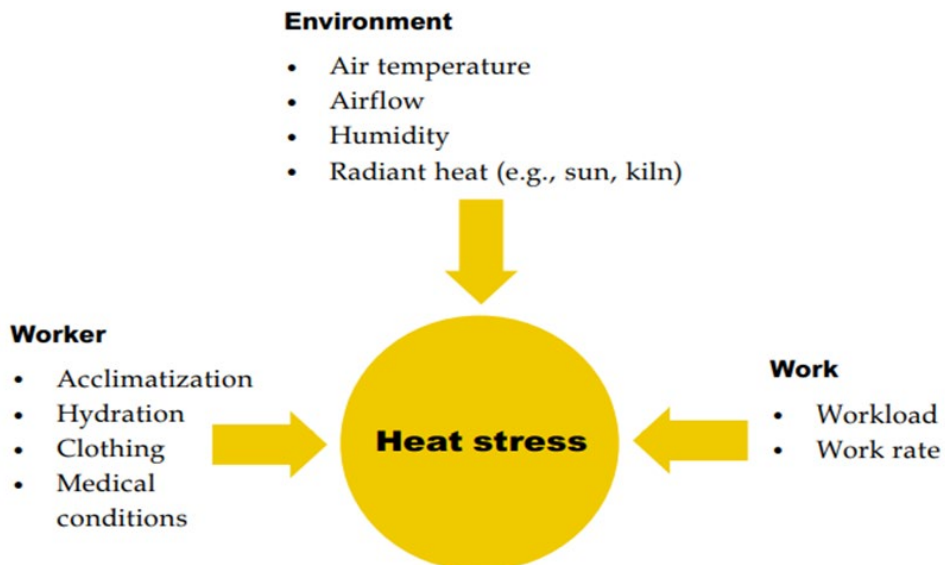
Protect employees from potential heat-related illnesses during periods of high heat and humidity. Heat stress is an important health and safety issue that needs to be addressed in a timely manner to avoid catastrophic effects on workers. With an effective heat stress management program, not only will the worker be satisfied with the work environment, but the company will also have better productivity and less injuries.

2. Worker Exposure

There are three main causes of heat stress. They are:

| | |
|-----------------|---|
| The Environment | <ul style="list-style-type: none">• Radiant heat from direct or indirect sunlight (reflection from pavement or kilns)• Air temperature hotter than skin temperature (warms a worker up)• High humidity (makes it harder for a worker to cool down) |
| The Work | <ul style="list-style-type: none">• The more active you are, the more heat you will produce |
| The Worker | <ul style="list-style-type: none">• Conditioning (regular work in hot environments makes workers less prone to heat stress)• Poor health, including obesity, advanced age, and medical conditions (the body responds poorly to overheating)• Not staying hydrated• Excess clothing or inappropriate personal protective equipment (they trap heat and prevent cooling) |

Primary factors contributing to heat stress



3. Risks to Workers

As a worker's body heats up it loses fluids and salt through sweat. As workers dehydrate, they are less able to cool themselves down. Workers in a hot environment should be aware of these warning signs of heat stress:

- Excessive sweating
- Dizziness
- Nausea

If heat stress is not recognized and treated early, it can lead to heat disorders, which have serious effects on the body. These include:

| | |
|------------------------|---|
| Heat Cramps | <ul style="list-style-type: none">• Painful muscle cramps |
| Heat Exhaustion | <ul style="list-style-type: none">• Shallow breathing• Increased heart rate• Weak, rapid pulse• Cool, pale, clammy skin• Sweating• Weakness, fatigue, dizziness• Headache and nausea• Fainting• Muscle cramps |
| Heat Stroke | <ul style="list-style-type: none">• Hot, dry, flushed skin• No longer sweating.• Agitation and confusion• Decreased level of consciousness and awareness• Headache• Nausea and vomiting• Seizures• Increased in breathing rate.• Irregular pulse• Shock• Cardiac arrest |

4. Responsibilities

4.1 Supervisors

On days when the weather forecast predicts high heat and/or humidity:

- Check the heat index at the start of each shift. The heat index can be obtained by:
 - Using the computer, go to www.weather.gc.ca and under “local forecast to calculate the humidex, you need: The temperature: use a thermometer or your [current conditions](#). The Dew Point: use your [current conditions](#). Enter the values into the humidex calculator.
- Monitor the heat index, especially between 12 pm and 5 pm for changes in the heat index.
- Using the heat index, follow the procedures for the Heat Category that the heat index falls into (the heat index table with color categories is on page 7).

4.2 Operations Managers & HSQE Department

Department Managers and the Health and Safety Department are responsible for:

- The development and updating of an effective heat stress program.
- Ensuring heat exposure controls are available when the heat index climbs into the 30°C -39°C heat category.

4.3 Maintenance Department

The Maintenance Department is responsible for:

- Ensuring equipment necessary to reduce heat stress is operating and part of the Preventative Maintenance program. This includes Air conditioners, exhaust fans, floor fans, water fountain stations.
- While heat stress prevention procedures are activated for the season, review maintenance tasks and other tasks (contractors, vendors, etc.) for appropriate time to complete.

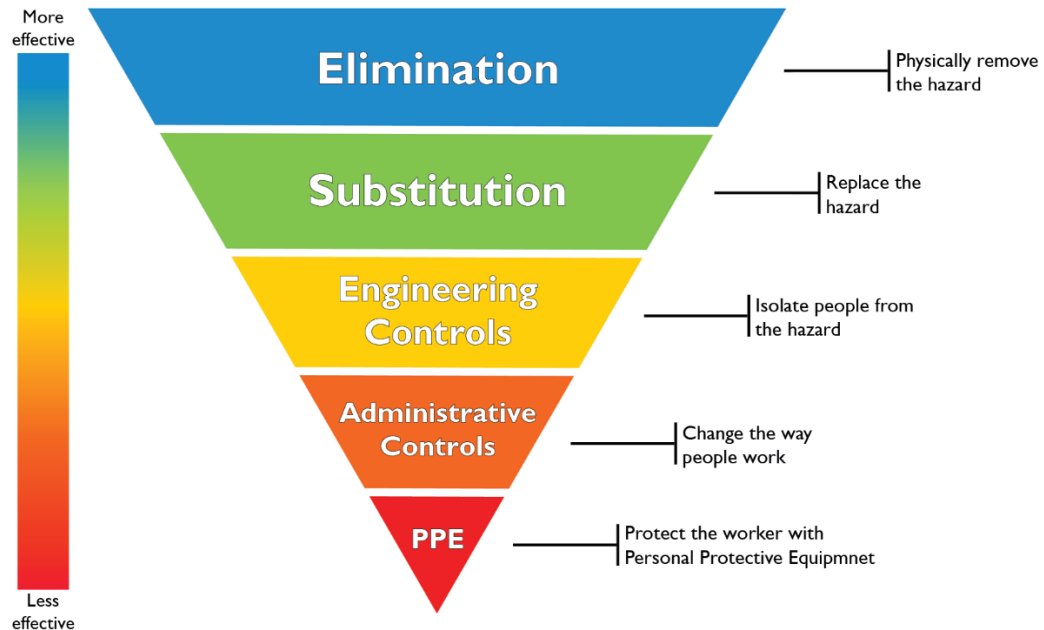
4.4 Workers

Workers are responsible for:

- Monitoring the heat index that will be provided to you by your supervisors at the beginning of the shift and throughout the day. Referring to Humidex readers at frequent intervals.
- Following the color category recommendations to stay cool.
- Let their supervisor know if they start experiencing symptoms of a heat-related illness.

5. Heat Stress Hierarchy of Controls

If a worker is exposed to environmental conditions that could cause heat disorders, the employer must implement engineering controls to reduce exposure. If engineering controls are not practical, the employer must provide administrative controls (such as an appropriate work-rest cycle) or personal protective equipment if the equipment provides protection equally and effective as administrative controls. Combinations of various control methods often provide the most effective protection from heat stress.



6. Humidex Response Table

Squamish Terminals will use the humidex to determine our response levels as documented in the humidex response table.

Humidex Response Table

| Humidex | Response |
|--------------|---|
| 25 - 29°C | <ul style="list-style-type: none"> Supply water source to workers on an “as needed” basis |
| 30 - 33°C | <ul style="list-style-type: none"> Post Heat Stress Alert notice: Encourage workers to drink extra water. Start recording temperature and relative humidity when checked. |
| 34 - 37°C | <ul style="list-style-type: none"> Notify workers that they are drinking extra water and encourage workers to supplement with electrolytes to prevent low sodium levels. |
| 38 - 39°C | <ul style="list-style-type: none"> Provide 15 minutes relief per hour. Workers should consume at least 1 cup (250 mL) of water every 20 minutes. |
| 40 - 42°C | <ul style="list-style-type: none"> Provide 30 minutes relief per hour |
| 43 - 44°C | <ul style="list-style-type: none"> If feasible provide 45 minutes relief per hour. if a 75% relief period is not feasible then stop work until the Humidex is 42°C or less. |
| 45°C or over | <ul style="list-style-type: none"> Stop work until the Humidex is 44°C or less |

7. Heat Exposure Control Procedures

Overheating prevention measures are designated by the color categories on the Humidex Response Table.

Workers performing hot work and wearing FR coveralls will follow the procedures for next level color category, for example if the heat index shows the color category to be 38 – 39°C, Workers will follow prevention measures for the 40 - 32°C category.

7.1. 30°C- 39°C Heat Category

- Utilization of fans to increase air movement.
- Open exterior doors to increase air movement.
- Frequent communication between Supervisors and workers to determine if worker discomfort level is beyond what is indicated by the heat index.
- Provide breaks as needed.

7.2. 40°C- 42°C Heat Category

- Provide workers with a commercial electrolyte solution (Gatorade etc.) to help prevent electrolyte loss.
- Provide extra breaks as needed.
- Supervisors to monitor Workers for heat related symptoms.
- Supervisor to offer head bands soaked in ice water.

7.3 43°C - 44°C Heat Category

- Provide extra breaks as needed.
- Scheduling additional employees and or rescheduling /adjusting work hours, if possible.
- Employees need to monitor each other and report any suspected heat-related symptoms to their supervisors.

7.4 45° and Above Heat Category

- Senior management approval needed to continue work.
- Continue all heat-related illness prevention measures in High Heat Category
- Employees should monitor themselves constantly for heat-related illness and report any symptoms to their supervisors immediately.

Appendix A. Heat Exhaustion vs Heat Stroke Poster

The infographic is a vertical poster divided into two main color-coded sections: yellow for Heat Exhaustion and red for Heat Stroke. At the top, the words 'HEAT EXHAUSTION' and 'HEAT STROKE' are written in white on their respective backgrounds, separated by the word 'OR'. In the center, a stylized human figure is split vertically down the middle. The left side is yellow and the right side is red. Various symptoms are listed on both sides, with lines pointing to icons on the figure. For Heat Exhaustion, symptoms include faint or dizzy (dizzy icon), excessive sweating (sweat drops icon), cool, pale, clammy skin (blue thermometer icon), nausea or vomiting (stomach icon), rapid, weak pulse (heart with weak pulse icon), and muscle cramps (lightning bolt icon). For Heat Stroke, symptoms include throbbing headache (lightning bolt icon), no sweating (no sweat drops icon), body temperature above 103° and red, hot, dry skin (red thermometer icon with an upward arrow), nausea or vomiting (stomach icon), rapid, strong pulse (heart with strong pulse icon), and may lose consciousness (sad face icon). At the bottom, the left side lists three treatment steps for Heat Exhaustion, and the right side features the text 'CALL 9-1-1' and one treatment step for Heat Stroke. Logos for the National Weather Service and a local emergency services agency are at the bottom center.

HEAT EXHAUSTION OR HEAT STROKE

Faint or dizzy — Throbbing headache

Excessive sweating — No sweating

Cool, pale, clammy skin — Body temperature above 103°
Red, hot, dry skin

Nausea or vomiting — Nausea or vomiting

Rapid, weak pulse — Rapid, strong pulse

Muscle cramps — May lose consciousness

- Get to a cooler, air conditioned place
- Drink water if fully conscious
- Take a cool shower or use cold compresses

CALL 9-1-1

- Take immediate action to cool the person until help arrives

NATIONAL WEATHER SERVICE

AM I HYDRATED?

| | | |
|-----------------|--|---|
| 1 | | |
| 2 | | If your urine matches the colours 1, 2, or 3, you are properly hydrated. |
| 3 | | Continue to consume fluids at the recommended amounts. |
| RED LINE | | |
| 4 | | If your urine color is below the RED line, you are <u>DEHYDRATED</u> and at risk for cramping and/or a heat illness!! |
| 5 | | |
| 6 | | <u>STOP - YOU NEED TO DRINK MORE WATER!</u> |
| 7 | | |
| 8 | | |