

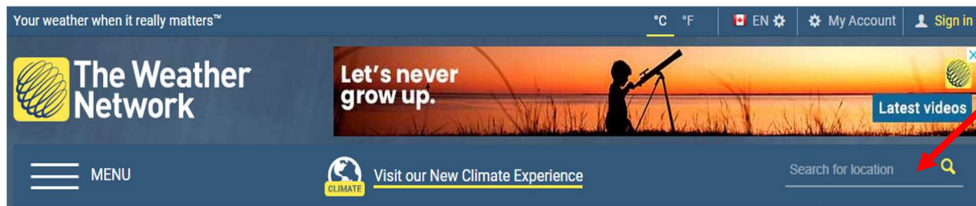
**Humidex Risk Assessment for Outdoor Workers**

Humidex combines the effect of air temperature and relative humidity to describe the body’s perception of a hot environment (i.e. how hot the weather feels). Humidex is used to determine the level of heat stress and is simpler than using wet bulb globe temperature (WBGT).

**Risk Assessment required when outdoor site temperature reaches 28°C.**

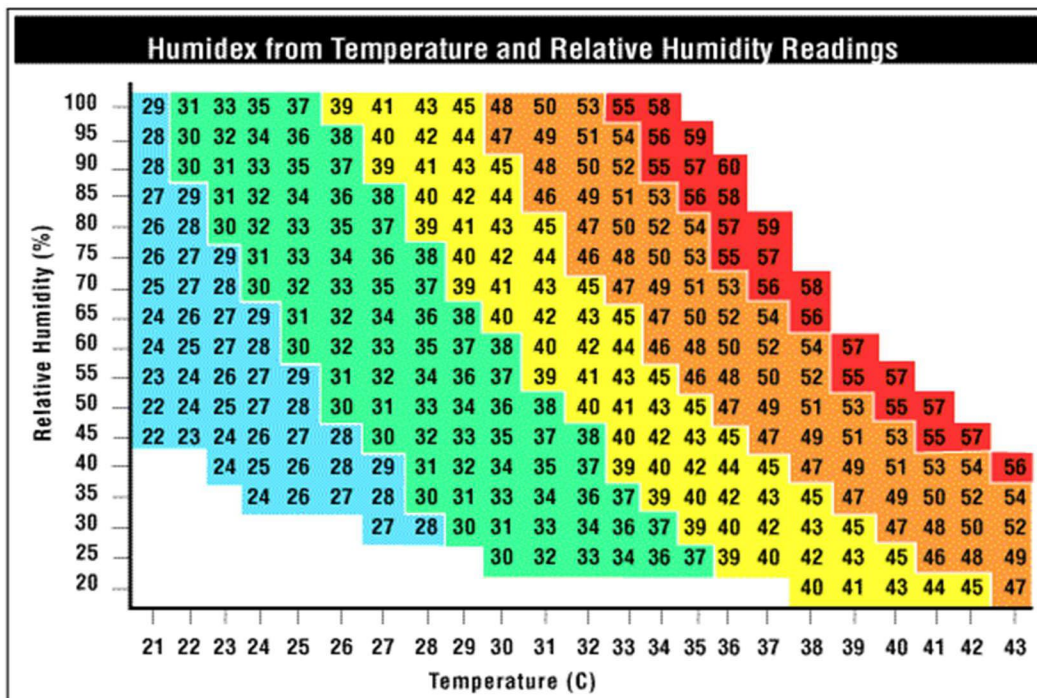
*Step 1 – Supervisor Looks up the Temperature and Humidity for the Site (or use on-site thermo-hygrometer, if available, and go to Step 2):*

1. Determine the closest elementary school to your site using the Surrey School map located here: <https://legacy.surreyschools.ca/Publications/2022-23%20Boundary%20Map.pdf>. Note: elementary schools are written in black NOT blue (high schools)
2. Go to <https://www.theweathernetwork.com/ca>
3. Then under Search for Location type in the name of the elementary school closest to your site.



4. This will show you the temperature (°C) and Humidity (%) for that area.

*Step 2 – Supervisor Determines Humidex:* Use the chart below – put your left hand on the site relative humidity; right hand on the site temperature and trace your fingers in a straight line until they meet. Where they meet is the site Humidex.



**Step 3:**

**Supervisor Adjusts the Humidex Number: Based on Clothing and PPE worn**

The body gets rid of excess heat buildup by sweating. In hot conditions, the best clothing to wear is fabrics that make it easiest for sweat to evaporate. The Humidex Table in Step 2 is based on summer clothes (light shirt and pants, underwear, socks and shoes) with little or no radiant heat. Any additional clothing/PPE requires adjustments to the Humidex number by adding the following, if they apply:

- Cotton coveralls worn over undergarments (+0°)
- Cotton coveralls worn over long sleeve shirt and pants (regular clothes) (+ 5°)
- Hardhat worn (+ 1°)
- Apron/vest worn (+ 1°)
- Gloves worn (+ 1°)
- Direct sunlight (not in shade) between 10 am and 4 pm (+ 2-3°) – adjust according to percentage cloud cover

**Step 4: Supervisor Determines Appropriate Response:** Take your adjusted Humidex number and compare it to the Humidex Response Table below to determine the appropriate response and work/rest schedule.

**4a: Acclimatized or not:**

- **Unacclimatized worker:** a worker who is not accustomed to working in a hot environment or has been out of a hot environment for seven consecutive days (exposure to air conditioning does not affect acclimatization).
- **Acclimatized worker:** used to working in a hot environment (i.e., outdoor work in hot weather) and their body has adapted and is regulating core temperature in the hot environment.
  - typically takes 7 – 10 days to get acclimatized

**4b: Workload: Light, Moderate or Heavy Work based on WorkSafeBC definitions.**

Recreation Outdoor Workers	
Job Tasks	Workload
Active Day or Sport camp leader	Moderate work
More sedentary camp (art camp etc.)	Light work
Outdoor workout leader	Moderate work
Parks Outdoor Workers	
Job Tasks	Workload
Manual digging, shoveling, raking with other mixed tasks	Moderate work
Manual construction tasks (intense): Manual digging (ex: ditches), sawing, shoveling	Heavy work
Manual weeding or line cutter use	Moderate work
Garbage pick up	Moderate work
Arborists (consulting tasks)	Light work
Arborists (physical labour including chainsaw use, climbing & chipper)	Heavy work
Carpentry – playground/fences (typically power tool use)	Moderate work
Heavy equipment operation and mowing	Light work

4c: Humidex Control Measures and Work-Rest Cycles for Workers:

Note: Light Work does not have any numbers in the Humidex table for acclimatized workers (only unacclimatized) and the table considers all Heavy Work workers to be acclimatized.

Humidex		Response (Apply all lower level controls cumulatively)	HEAT STRESS ALERT
<u>Humidex 1</u> Moderate Unacclimatized & Heavy Acclimatized	<u>Humidex 2</u> Moderate Acclimatized and Light Unacclimatized		
25 – 29	32 – 35	Supply water to workers on an “as needed” basis	
30 – 33	36 - 39	Post heat stress alert, encourage workers to drink extra water; start recording the hourly temperature and relative humidity (Humidex Value) in the table below	
34 – 37	40 - 42	Post heat stress alert, notify workers that they need to drink extra water; ensure workers are trained to recognize heat stress symptoms	
38 – 39	43 - 44	Work with 15 minutes relief per hour can continue; provide adequate cool (10 - 15°C) water; at least 1 cup (240 mL) of water every 20 minutes. Worker with symptoms should seek medical attention	
40 – 41	45 - 46	Work with 30 minutes relief per hour can continue in addition to the provisions listed previously	
42 – 44	47 - 49	If feasible, work with 45 minutes relief per hour can continue in addition to the provisions listed above	
45 and over	50 and over	Only medically supervised work can continue	

Source: WorkSafeBC OHSR Guidelines

**REMEMBER: Never ignore the symptoms of heat stress, even if the humidex value is within normal limits.**

**Step 5: Supervisor completes the Heat Stress Risk Assessment Form and communicates the Humidex and appropriate control measures to applicable staff.**

**Step 6: At the end of the day, the Supervisor files the completed Heat Stress Risk Assessment Form themselves or with the Department Clerk.**

**Trial Parks & Recreation & Culture Outdoor Workers Heat Stress Risk Assessment**

Site: \_\_\_\_\_

Date: \_\_\_\_\_

Site Address: \_\_\_\_\_

**Risk Assessment required when outdoor site temperature reaches 28°C.**

<b>Step 1 – Look Up Site Temperature and Humidity (on websites listed in instructions)</b>			
Air Temperature			
Relative Humidity			
<b>Step 2 – Determine Humidex</b>			
Calculated Humidex (using chart above)			
<b>Step 3 – Adjust the Humidex Number (based on clothing and PPE worn)</b>			
Coveralls worn over undergarments	<input type="checkbox"/> No	<input type="checkbox"/> Yes (add 0°)	
Coveralls worn over regular clothes	<input type="checkbox"/> No	<input type="checkbox"/> Yes (add 5°)	
Hardhat worn	<input type="checkbox"/> No	<input type="checkbox"/> Yes (add 1°)	
Gloves worn	<input type="checkbox"/> No	<input type="checkbox"/> Yes (add 1°)	
Apron/vest worn	<input type="checkbox"/> No	<input type="checkbox"/> Yes (add 1°)	
Direct sunlight (not in shade) between 10 am and 4 pm – adjust according to percentage cloud cover	<input type="checkbox"/> No	<input type="checkbox"/> Yes (add 2-3°)	
<b>Adjusted Humidex Value (Initial Humidex plus additions)</b>			<b>=</b>
<b>Step 4 – Determine Appropriate Response</b>			
Worker Acclimatized?	<input type="checkbox"/> No	<input type="checkbox"/> Yes	
Workload (see 4b)	<input type="checkbox"/> Heavy	<input type="checkbox"/> Moderate	<input type="checkbox"/> Light
<b>Heat Stress Control Measures Required (based on Humidex Control Measures table above)</b>			

<b>Hourly Site Humidex Log</b>								
<b>Humidex 1 Moderate Unacclimatized &amp; Heavy Acclimatized required Humidex 30°C and up</b>								
<b>Humidex 2 Moderate Acclimatized and Light Unacclimatized required Humidex 36°C and up</b>								
<b>Time</b>								
<b>Temperature</b>								
<b>Humidity</b>								
<b>Humidex</b>								

Completed risk assessment to be filed with the Supervisor or Department Clerk

Need help? Please to contact OHS at [safety@surrey.ca](mailto:safety@surrey.ca) for guidance.