



U.S. Geological Survey Manual

*Appendix 45-3
Part 445-2-H Chapter 45*

The work rest times and fluid replacement volumes in the chart below should sustain performance and hydration for approximately 4 hours of work in any given heat category.

Heat Category	WBGT Index, (F°)	Easy Work		Moderate Work		Hard Work	
		Work/ Rest	Water Intake (Qt/h)	Work/ Rest	Water Intake (Qt/h)	Work/ Rest	Water Intake (Qt/h)
1	78-81.9	NL	½	NL	¾	40/20 min	¾
2 (Green)	82-84.9	NL	½	50/10 min	¾	30/30 min	1
3 (Yellow)	85-87.9	NL	¾	40/20 min	¾	30/30 min	1
4 (Red)	88-89.9	NL	¾	30/30 min	¾	20/40 min	1
5 (Black)	> 90	50/10 min	1	20/40 min	1	10/50 min	1

The work rest times and fluid replacement volumes in the chart below should sustain performance and hydration for continuous work (an 8-hour day) in any given heat category. It is assumed that the individuals are already acclimated, have no previous heat injury experience, and will have a normal night's rest after the work.

Heat Category	WBGT Index, (F°)	Easy Work		Moderate Work		Hard Work	
		Work (min)	Water Intake (Qt/h)	Work (min)	Water Intake (Qt/h)	Work (min)	Water Intake (Qt/h)
1	78-81.9	NL	½	NL	¾	70	1
2 (Green)	82-84.9	NL	½	150	1	65	1 ¼
3 (Yellow)	85-87.9	NL	¾	100	1	55	1 ¼
4 (Red)	88-89.9	NL	¾	80	1 ¼	50	1 ¼
5 (Black)	> 90	180	1	70	1 ½	45	1 ½

NL - No limit on the amount of work that can be performed.

Rest - Sitting or standing, preferably in a cool or shady area.

Easy work - Walking on a straight, flat surface at a strolling pace without much of a load or riding in a motorized vehicle and performing light work such as paperwork and collecting specimens or samples.

Moderate work - Walking on a softer surface or at a purposeful pace and performing moderate work such as scaling moderate hills, carrying equipment and supplies, lawn mowing on a flat surface, and canoeing and kayaking at a leisurely pace.

Hard work - Manual labor such as digging, climbing, chopping wood, using a chainsaw, clearing brush, and carrying heavy equipment.

Note: Add 5° Fahrenheit to the heat index if an individual is wearing clothing or protective garments that might increase heat load; e.g., personal floatation devices, hip waders, coveralls, or other personal protective equipment.