

WATER HEATER SIZING CALCULATIONS

(per NSF Standard #5)

Directions: Complete this form to verify the adequacy of the proposed hot water heater for the hot water demands proposed in the food facility plans.

Type of Fixture	Gallons per Hour (GPH) per Compartment	Number of Compartments	GPH Totals
Utensil Wash			
Dishwasher	<i>Refer to manufacturer specs for the GPH</i>	_____	_____
Pre-rinse units	45	_____	_____
18" X 18" compartments	14	_____	_____
24" X 24" compartments	25	_____	_____
Custom sink	<i>Length x Width x Depth x 7.5 = gals/compartiment</i>	_____	_____
Bar sink compartments	10	_____	_____
Food Preparation			
Food preparation sink	5*	_____	_____
Handwash			
Handwash sink	5	_____	_____
Janitorial			
Janitorial Sink	15	_____	_____
Miscellaneous			
Employee shower	20	_____	_____
Clothes washer (9-12lb.)	45	_____	_____
Clothes washer (16 lb.)	60	_____	_____
Other: _____	_____	_____	_____
TOTAL GPH:			_____

Gas Water Heater, BTU is: Total GPH x 666 _____ x 666.4 = _____ BTU

Electric Water Heater, KW is: Total GPH x 0.147 _____ x 0.147 = _____ KW

Tankless (assume 60 ° F. rise in water temperature to 120 ° F)
 Water heaters: 20% reduction if using single use utensils only

* Per CCDEH Guidelines-Sept 1995

Sizing Requirements for Instantaneous Water Heaters (Tankless)

One of the advantages of an instantaneous water heater is its ability to provide a continuous supply of hot water. However, since the water passes through a heat exchanger, the water must flow through the unit slowly to ensure proper heat transfer. Therefore, the quantity, or rate, at which the hot water is delivered can be significantly less than that provided by a storage water heater. When hot water is utilized at several locations of the food facility at the same time the flow of hot water to each fixture can be severely restricted. As a result of the restricted output of instantaneous water heaters, more than one unit may be required, depending on the numbers and types of sinks and equipment present. Instantaneous water heaters must be sized to provide hot water of at least 120° Fahrenheit. The average temperature of tap water varies throughout the State depending upon the location, elevation, and time of year. In order to properly size the water heater, provide a specification sheet for the proposed water heater which includes a graph of GPM vs. temperature rise. In this instance, a tap water temperature of 60° Fahrenheit will be used. Therefore, to achieve a temperature of 120° Fahrenheit at the faucet, the proposed water heater would need to provide the required GPM at a 60° F rise in temperature.

Type of Fixture	Gallons per Minute (GPM)	X (Number of fixtures) =	GPM Totals
Three compartment sink	2		
Hand lavatories	½		
Janitorial sink	2		
Prep sink	½		
Automatic Warewasher*	Per ANSI standards	N/A	

*Food facilities that install an automatic warewashing machine that utilizes a large quantity of hot water may be required to provide an instantaneous water heater exclusively for the warewashing machine. NSF International listings or listings established by other nationally recognized testing laboratories are used to determine the minimum GPM hot water demand for automatic warewashing machines.