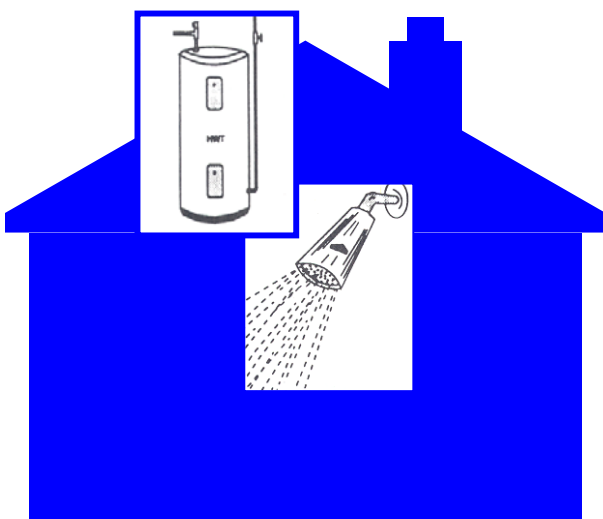


Home comfort: water heating



Water heating usage

Hot water. It's one of those luxuries we give little thought to until we run out. This information is provided to help you get the most value and comfort for your water heating dollar.

Water heating is the second largest energy user in our homes and accounts for about 20% of household energy costs. For families with electric water heaters, the monthly energy consumption is usually between 300 and 500 kWh per month.

For example, if your average water heater energy consumption level is 400 kWh per month and the price you pay for electricity is 7 cents per kWh, your total monthly energy costs for water heating would be:

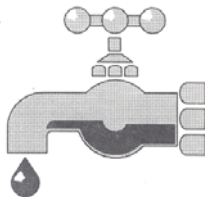
$$400 \text{ kWh} \times 7 \text{ cents} = \$28.00$$

On average, the typical family of four uses 125 to 250 litres (28 to 56 gallons) of hot water per day. Usually the highest demand occurs during the morning rush and after dinner. Some days you may use more or less hot water, depending on your activities.

Calculating Typical Hot Water Consumption						
	Litres		Imperial Gallons		\$	
baths (1/2 full)	34 - 43		8 - 10		0.18 - 0.23	
dishwasher (per load)	42 - 65		9 - 13		0.24 - 0.30	
Dish washing (by hand)	7 - 16		1.5 - 3.5		0.04 - 0.08	
personal use (per person, per day)	15		4		0.09	
Laundry:						
hot wash/warm rinse	135		30		0.70	
hot wash/cold rinse	87		19		0.44	
warm wash/cold rinse	41 - 54		9 - 12		0.21 - 0.28	
Showers:						
	Energy Efficient Showerhead			Standard Showerhead		
	Litres	Gallons	\$	Litres	Gallons	\$
5 minute	22	5	0.11	54	12	0.28
10 minute	44	10	0.22	110	24	0.56
15 minute	64	14	0.34	160	36	0.84

Did you know?

- based on 7 cents per kWh, the cost to re-place one 40 gallon tankful of hot water is approximately \$0.90.
- one quarter of your hot water is used for laundry.
- about 40 percent of your hot water is used for baths and showers.
- an energy efficient showerhead can reduce the amount of hot water for your shower by about 50 percent.
- there's an easy way to find out how much water you use in the shower. Next time you shower, plug the drain and at the end of the shower check the water level. Is it more or less than you use for a bath?
- rinsing the dishes under a generous flow of hot water can use more hot water than a dishwasher.
- hot water costs are higher in winter because the water coming into your home is colder.
- a hot water tap leaking 1 drop per second will waste 24 litres or 5.3 gallons of hot water per day. At 7 cents per kWh, this costs approximately \$3.70 per month.
- An electric kettle uses approximately 50 percent less energy than boiling water on an electric range top element.



Do you run out of hot water?

If you regularly run out of hot water, your hot water tank may be too small for your family's needs. Your water heater should be able to supply enough hot water for high demand days when there are showers, baths, laundry and dishwashing.

A close look at household characteristics and activities will give you an indication of where your hot water is going. Factors such as the number of family members, the size of your home, the age of your children and the use of appliances like the dishwasher and clothes washer will affect your demand for hot water.

On a peak day, a typical family of four may use up to 450 litres (100 gallons) of hot water for their daily household needs. If you regularly run out of hot water, you may want to consider reducing your hot water consumption by installing low flow showerheads and faucet aerators, changing some of your hot water usage to different times of the day, or buying a larger water heater using the chart below as a guide.

Size Selection based on family and house size					
Family Size	House Characteristics	Estimated Peak Day Use		Tank Capacity	Tank Capacity
		(litres)	(gallons)	(litres)	(gallons)
Up to 3	Vacation cottage; no dishwasher or clothes washer. Low hot water use.	227	50	135	30
Up to 4	Up to 3 bedrooms; 2 bathrooms; moderate hot water use, dishwasher or clothes washer.	450	100	180	40
5+	2 or more bathrooms, 3-5 bedrooms, normal hot water use, clothes washer and/or dishwasher.	600	130	270	60

Reducing hot water energy usage

- install low flow showerheads.
- wash clothes in cold or warm water whenever possible.
- select appropriate water level for clothes washer load.
- always use a cold water rinse in the clothes washer.
- wash only full loads in dishwasher.
- reduce water heater temperature to appropriate level.
- install faucet aerators to provide a full flow effect with much less water.
- install a water heater insulation blanket.
- look for an energy efficient water heater when purchasing a new one.
- insulate hot water pipes.
- repair any dripping hot water faucets.

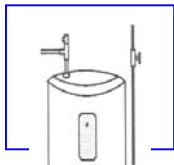
Water heater maintenance

Gas or oil - once a year:

- Call a specialist to do a maintenance check.

Electric - once a year:

- Turn off electric circuit to the water heater.
- Close the water supply valve.
- Attach a garden hose from draincock at bottom of tank to basement drain or outdoors.
- Open the highest hot water faucet in the house.
- Open draincock and drain tank completely to flush out scale, rust and sediment.
- Close draincock and open supply valve to refill the tank.
- After water tank is completely refilled, close highest faucet in house and turn the electric circuit to the water heater back on.



Your hot water heater: Four things to consider

1. Location

An electric water heater can be installed almost anywhere in the house. For maximum efficiency, it should be placed near the point of greatest use such as the kitchen, laundry room or bathroom. For example, locating the tank so you use a 3m (9ft) length of pipe rather than a 9m (27ft) pipe can save you enough hot water in one month for ten showers.

Also, choose a location that doesn't freeze in winter. And if the tank develops a leak or requires servicing, a floor drain nearby will help minimize water damage.

2. Installation

When buying an electric water heater or having one installed, ensure it has met the high performance, safety and durability standards of the CSA (Canadian Standards Association).

When installing your water heater, leave at least a 50mm (2 in) clearance around back and sides.

Make sure access covers are unobstructed and can be easily reached for service and maintenance.

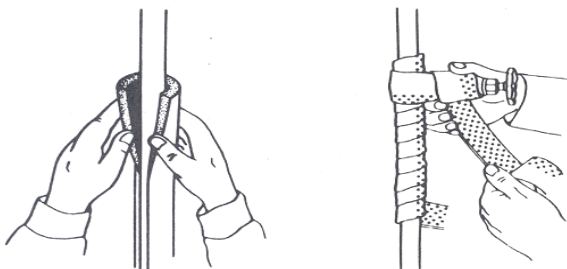
Also ensure the circuit breaker is shut off before you begin.

For protection against over heating and over pressure, a combination temperature pressure relief valve should be installed on the hot water outlet or

in a special fitting at the top of the tank. A pipe should be connected to the relief valve outlet directing the water to the floor or nearest drain.

3. Insulation

The two basic types of pipe insulation are wrapped and slip-on. Both are easy to install and available in hardware or home improvement stores. As a minimum, insulate the first 1 to 2 meters (3 to 6 feet) of hot water pipe from your water heater.



Insulating pipes that pass through cold or unheated areas can help hot water arrive at the faucet at higher temperatures and more quickly.

4. Water temperature

A setting of 54 to 60°C (130 to 140°F) is suitable for most homes. A setting of 60°C (140°F) is usually recommended for homes with dishwashers.

To provide a reasonable supply of hot water for household activities and minimize the risk of bacteria growth, your hot water heater should not be set lower than 52°C (125°F).

Be careful with hot water. To prevent scalding, always test the water before entering a bath or shower. Never leave small children unattended in the bath and be considerate with water usage when someone is showering.

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