

Pacific Park Place Housing Co-op
Electric Hot Water Tanks – How Efficient Are They?

The type of heating element inside the hot water tank and the temperature of the water coming into the unit each play a part in determining how long it takes the water to heat up once the tank is depleted. Hot water heaters have two ratings that can help you determine their efficiency: the recovery and first-hour ratings, both of which play a part in the length of time it takes to heat up the water in it. Look on your hot water heater for the **energy guide sticker**, which should display both of these figures.

Draw Efficiency

The draw efficiency of both gas and electric heaters is based on a calculation of 70 percent of the overall storage tank size. A 50-gallon hot water heater has a draw efficiency of 35 gallons -- because as hot water goes out, cold water comes in. A 50-gallon hot water heater is best suited for three bathroom homes or a home with two baths and a washing machine. Washing machines require 20 gallons of hot water; dishwashers need 10, while a one-person bath requires at least 10 gallons of hot water.

First-Hour Rating (FHR)

The total amount of the water drawn in gallons from the hot water heater during one hour - with the unit set to a water temperature of 135 degrees Fahrenheit - determines its first-hour rating as per the tests specified by the U.S. Department of Energy for the unit. The test results for the unit appear on its energy guide sticker.

The test is based on a 3-gallon draw per minute, which stops once the drawn hot water drops 25 degrees. After the temperature again reaches 135 degrees, the process is repeated continually over an hour in the same way. The total gallons of water drawn during this hour represents the hot water heater's FHR and is an indication of how much water is available during peak usage times during the day.

Recovery Rating

The recovery rating is determined by the amount of power the unit gets. Gas hot water heaters are more efficient than electric ones; they heat up in about half the time. The temperature of the

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water coming into the unit and the temperature setting to heat the water, in conjunction with the power supply, determine how long it takes for a 50-gallon hot water heater to heat up.

Electric Hot Water Heater Recovery

A 50-gallon hot water heater with 5,500-watt elements set to 120 degrees takes about 1 hour and 20 minutes to heat water coming in to the unit at 60 degrees. Conversely, when the water entering this same tank is 40 degrees, it takes 1 hours, 47 minutes to heat it up. For 70-degree water entering the tank, it takes 1 hour, 6 minutes to reach its full heat of 120 degrees.