April 30, 2012

Cold Climate Housing Research Center
CCHRC

Domestic Hot Water

Should I put a blanket on my water heater?

Storage water heaters lose energy to standby losses. Standby losses, also called jacket losses, refer to the heat that the water in the tank loses to the surrounding air. Since the water in the storage tank is at a higher temperature than the air in the room it is located in, heat travels through the tank walls and is lost to the room. When the storage tank is in an unconditioned space, such as a garage or crawlspace, this energy is completely wasted. The standby losses can be reduced by covering the water heater with a dedicated blanket. The blanket reduces heat loss from the water, just like adding a blanket to your bed helps keep your body heat under the covers.

Water heater blankets are sold in home improvement stores for $15–$30 and are fairly easy to install. It shouldn't take more than an afternoon to put it on the water heater, and the blankets come with step-by-step instructions. You just have to be careful to keep the jacket away from any fuel lines - especially important if you use natural gas to heat your water.

While it is true that installing a blanket on your storage water heater will make the water heater more efficient, it doesn't always make sense from a whole building energy use point-of-view. In most cases, the blanket will save you a few water-heating dollars, but in other cases, it could actually be less efficient than allowing jacket losses from the water heater to heat the room. Look at the flow chart to see if you can benefit from putting a blanket on your water heater.

The amount of money you can save by insulating a hot water tank depends on several factors:

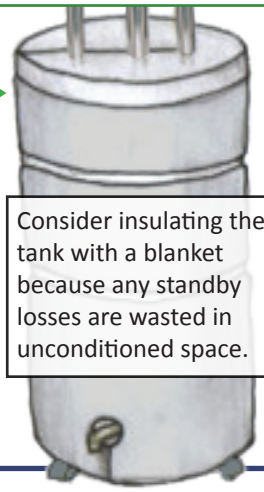
- The warmer the temperature of the water in the tank, the more money you can save by adding an insulating blanket.
- The cooler the temperature of the room the tank is located in, the more money you can save by adding an insulating blanket.
- The less efficient your water heater is, the more money you can save by adding an insulating blanket.

Is your water storage tank located in a cold area, like the garage??

– –YES– – –

NO

Don't worry about installing a blanket. In a conditioned space, the jacket loss from the water heater is useful, because it is adding heat to a room that needs it and thus alleviating the pressure on your space heating appliance. While a jacket would make your water heater slightly more efficient, our calculations have shown that any savings are minimal in the heating-dominated climate of Alaska.



Consider insulating the tank with a blanket because any standby losses are wasted in unconditioned space.

Depending on the price of the fuel (gas, electricity or oil) your water heater uses, the blanket can pay for itself in a year or two.

How efficient is your water heater?
Water heaters are rated according to an Energy Factor, or EF. The EF is an experimentally determined value that gives the efficiency of the heater over a 24-hour period. You may see it reported as a decimel or a percentage, for instance, 0.8 or 80%. A higher EF indicates that the water heater is more efficient.

Cold Climate Housing Research Center | 1000 Fairbanks Street | Fairbanks, AK 99708
907-457-3454 | ww.cchrc.org

Cold Climate Housing Research Center
CCHRC

Domestic Hot Water

Ways to save money with a stand-alone storage water heater

$ = Cost-savings potential

There are many ways to reduce your hot water heating bill. In addition to installing a water heater blanket (see the other side for more details), consider these strategies for reducing energy use in your home. The more steps you take, the more money you can save. Also remember to get your water heating system checked yearly by a heating professional to flush the system of sediment, inspect for rust, check for leaks at pressure valves, and ensure controls are working properly. Annual maintenance will prevent breakdowns and keep the system working efficiently.

Insulate your water heater pipes $

Insulating your hot water pipes, or the pipes that go from your storage tank to the faucet, saves energy and improves comfort. The hot water in the pipes leaks heat to the surrounding air on its way to the faucet, so reducing this heat loss, especially if the pipes run through unconditioned space such as an attic or garage, will save you some cash each year. It also means the water will arrive at the faucet hotter, since it will have lost less heat. Pipe wrapping is sold at hardware stores (at about $1 for 6 feet) and is easy to install.

Repair leaky faucets $$

Fixing leaky faucets may cost around $100 (depending on your plumber) but will reduce water usage and, if the faucet carries hot water, yield energy savings. A faucet that drips just 10 times each minute can waste up to 350 gallons of hot water a year.

Lower the water temperature in your storage tank $$

Often, the temperature of the water in your storage tank is set higher than necessary. A temperature of 130°F is sufficient to stop bacterial growth, mineral buildup, and corrosion while still providing adequate hot water. To lower the temperature of the tank, consult the tank manual. Another option is to lower the temperature when you're away from home for more than three days. The less efficient your water heater is, the more money you can save by lowering the temperature.

Install low-flow showerheads and faucets $$

Low-flow showerheads and faucets are another conservation strategy that can cut hot water usage in half (down to a half-gallon per minute on a faucet and 2.5 gallons per minute for a shower). They work by adding pressure, so you don't notice the loss in water volume.

Consider buying a more efficient water heater $$$

For the average water user, upgrading from a water heater with an Energy Factor of 0.6 (an efficiency of 60%) to one with an Energy Factor of 0.8 (an efficiency of 80%) of the same fuel type can typically save you enough water-heating dollars to pay for the new model in just a few years. As an added bonus, some water heaters will qualify for energy efficiency rebates, and newer combustion models are safer than their predecessors.