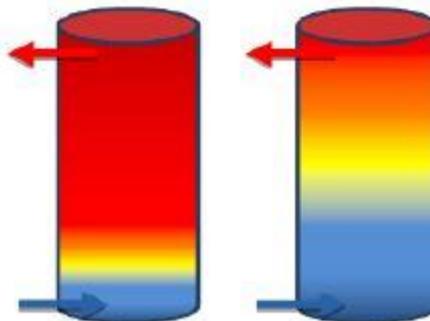


Isn't it better value to keep the cylinder fully heated, as to heat it up from near cold will use more power?

The simple answer is no.

When you maintain an entire cylinder of hot water it will radiate (lose) the most heat. Even the most modern A grade cylinder will radiate heat (lose 33% of heat stored per day), just not as much as the older models. That is why the hot water cupboard was a great place to dry or air clothes, it was warm but that heat is not free.

The **iSmart Controller™** will avoid heating until it has to, all the while still ensuring you do not run out of hot water. This is one of the ways it saves you money.



The hot water cylinder can be thought of a bit like a battery. With a capacity of say 12kWh¹ (it will take 12,000 watts of heat applied for 1 hour to get it to this state). The electric element is 100% efficient (yes it really is!) so it will not be 'less efficient' to heat the water you need from cold; the energy has to come from somewhere. The only inefficiency is lost heat through the cylinder walls.

Example; you might need say 2.5kWh of that heat for a shower.

You don't need the entire 12kWh, just 2.5kWh. The remaining is unnecessary for now and will lose heat to the atmosphere if stored.

Did you know installing a simple on/off timer for hot water cylinder power is illegal?

The law requires we are to be protected from dangerous Legionella growing in our hot water cylinders (which is the bacteria that causes the terrible Legionnaires disease). The regulations are under the Building Code section G12 (see also AS/NZS 3500.4 standard section 6.2.9). The standard method of complying has been the attempt to constantly heat the water to 60°C with a thermostat controlled electric element (or equivalent).

There are two alternate acceptable solutions where you can heat at least 50% the cylinder once a day to 60°C (no minimum time at 60°C) or the entire cylinder once a week to at least 60°C for one hour. The Smart Hot water controller complies with the third option mentioned.

Simply turning the cylinder on and off as a means of saving energy, without taking into account the water temperature is hazardous as the water temperature is not measured by the simple timer and cannot be guaranteed to meet the legal requirements mentioned above. A timer cannot offer an acceptable solution as we understand it.

Theoretically you are allowed to install a timer yourself (but it is very unwise) but a professional person cannot. Just you are allowed to give yourself food poisoning (but it is very unwise) but a restaurant is not.

Smart Control might change the hot water outlet temperature

Most people are used to a constant hot water temperature coming out of their cylinders. This is due to hot water traditionally being kept fairly consistently at 60°C or with more modern cylinders, using thermostatic mixing valves, coming out at 50°C. As a result most people are used to their shower mixers being at the same mix position.

However, it is wasteful to keep the entire cylinder heated (which is why you have a smart controller) The **iSmart Controller™** works on the principle of enough useful hot water.

Typical temperature used by most people to shower = 38°C, maximum is 42°C*

To obtain these temperatures from a 50/60°C hot water source you mix cold water with it.

The **iSmart Controller™** might sometimes maintain the outlet temperature below the standard you are used to (but still usefully hot).

This might mean occasionally the shower mixer has to be turned to a different location to obtain the same delivered temperature. This is not a fault; it is modern technology in action.

*Note:

- 50°C will burn an adult in 1 minute (a child much less) whereas 60°C will burn an adult in 2 seconds (a child much less). It has been a legal requirement for a number of years to have a thermostatic mixing valve fitted to a new cylinder. We strongly recommend having one fitted if your cylinder does not already have one
- Never leave a child unattended around hot water taps. Set the mixer to a safe temperature for them and always fill a bath with cold water first before adding hot water.
- Consider having your thermostatic valve adjusted down to 40°C if you have children or elderly persons in your house. This is considered a safe temperature². This is plenty hot enough for showering and ablutions

Author Lance Allen Engineer for iSmart Hot Water Controller



iSmart™
HOT WATER CONTROLLER

