

Degenerating water heater dip tube

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Steven from Pierrefonds, Quebec isn't getting much hot water out of his tank these days, and has little white plastic beads collecting in the strainer of his faucets. He has heard about a problem with water heater dip tubes, so he did his homework and writes: "I understand this is a common problem with U.S.-made tanks, made between Aug. '93 and Feb. '97 where the dip tubes were manufactured by Perfection Corporation?. My tank is Canadian and at least 12 years old. Am I correct in the assumption that my problem is the dip tube, and if it is, how difficult is it to replace this tube only, or do I have to discard an otherwise functional heater tank?"

Most hot water heaters bring the cold water into the tank on the top of the tank, but then there is a plastic pipe inside the tank that directs this cold water to the bottom of the tank. As the water heats up, it will rise in the tank and the hot water is taken off of the top. That plastic pipe is called a "dip tube". One of the problems in electric hot water tanks is that this plastic pipe passes close to the top heating element.

Perfection Corp makes about 80% of all the dip tubes in North America, and they did have a problem for four years. To their credit, when the problem showed up, they recalled the bad tubes and changed their formulation for the tubes made from 1997 on. But not everyone got their tubes changed, and apparently Steven was one of those.

To see if this is your problem, take those little white pellets and put them in vinegar. If they dissolve, your problem is calcium buildup and you may just need to flush out your tank. If they do not dissolve, they are plastic and you most probably have a problem with your dip tube. If you want a further check, and if you have an electric hot water tank, you can turn off the electricity, drain the tank and then remove the upper electrical element. That will give you a port hole to look inside the tank and inspect the dip tube. It should go from the top all the way to the bottom of the tank. If it only goes down to where the electrical element is, it has broken off.

Replacing a dip tube is actually quite easy: Shut off the energy to the tank. You need to remove the pressure from the water by opening a faucet, but you don't actually have to drain it. However, since you are supposed to drain a tank once a year, and you have probably never done that in your life, this is a good time to drain it. Then simply unscrew the dip tube from the top of the tank and screw a new one in its place. If your cold water goes into the tank on the side near the bottom, you have a heater that is designed without a dip tube.

Now, while we have the tank empty, you might as well inspect your anode rod (the sacrificial rod designed to corrode in order to draw harmful chemicals away from the tank itself). You do of course check the anode rod annually, don't you? It is right near the dip tube at the top of the tank, and sticks down into the tank just like the dip tube.

Remember that you must always fill the tank with water before reconnecting the energy source, whether it is electric, gas, oil, or propane.

And then after the tank is back up and running, as you do every year with your homeowner preventative maintenance, trip the safety valve for an instant, letting a little very hot water squirt out (careful where you stand) and shut it back down. If it doesn't squirt, or continues to leak, replace the safety valve as well.

That's right -- once a year you are supposed to:

Operate the safety valve; Drain any accumulation out of the bottom of the tank; Check the anode rod to see that it is still there (corroding is not a bad thing as this is a sacrificial rod that protects your tank against corrosion).

Preventative maintenance is far better than panic repairs.

Keywords:

