

Manufactured Homes - Keeping Water Lines from Freezing During a MN Winter

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If the ambient temperature outside is -35, that's about 70 degrees below the freezing point of water. Expecting a small wire with a pinpoint connection to keep your water from freezing in this environment is a lot to ask, and often does not hold up to the task. To help you, as homeowners, protect your water from these extreme Minnesota temperatures, I have taken time to do some research and found what I believe to be the easiest ways for you to maintain trouble free water in the winter.

- 1) **Heat tape.** There are several flaws in the overall way this is typically being done. First, the most commonly used heat tape that we see in our community is Easy Heat at 3 watts per foot. If you pay attention when you put the ends on you'll notice that the 2 screws that make the electrical contact are sharpened to points, like a needle, and the actual wire that creates your heat is approximately the size of a thick thread. That's it. That's all you have is a needle touching a thread. More than once I have seen this contact fail, causing a freeze up, even though the "light" is still on. Heat trace cable uses larger wire gauge and is intended to be permanently wired. It costs more because it is far better at what it is intended to do. All heat tapes are rated to protect to a certain temperature, assuming you have 1 inch of the correct insulation surrounding the pipe. It's been my observation that very few homeowners here, if any, have met this requirement. Most do not even come close. When you touch your water line and it's nice and warm, that's because your heat is escaping off into the great unknown. A potential solution is to use foil faced bubble wrap to re-wrap your water line. This is not considered a pipe insulation but I have found it does an incredible job at reflecting heat or cold and it is very user friendly. It is also a good short term solution to insulating the inside of your water box.
- 2) **Insulation.** Fiberglass batt insulation is just a bad idea for an area that can easily get wet. The foil faced bubble wrap is a much better solution.
- 3) **Heating your water box.** Most homeowners are currently using 20 ft. of heat tape tied in an endless knot around meters' valves and spigots with a little foam insulation secured with 2 rolls of electrical tape. While this could possibly keep someone from stealing parts off your water riser, it makes repairs a virtual nightmare. A better, and more reliable solution is to heat your water box - and there are several ways to do this. From what I have found, engine compartment heaters perfectly meet the criteria to work safely in your water box. Here are the names of a couple of them: Caframo Pali engine compartment heater OR the Extreme bilge heater (lots of sizes). They have an internal thermostat and are tested and safe for small, wet, confined areas. The Caframo Pali is the lowest cost - about \$150 on Amazon. If you prefer the Extreme brand, just remember you do not need a large model. Small is better for this application.
- 4) **Types of water line.** A copper water line is thermally conductive and absorbs heat very well. In comparison, plastic lines reject the heat. PVC is 125% more resistant to heat than steel and other plastic pipes will be similar. Compared to copper, the difference will be even greater. If you have plastic water lines and choose to use the lowest cost, lowest wattage heat tape there is, you should at least consider putting an extra heat tape on your line (use 2 of them). One as a back-up for the long term cold spells.