What is heat tape?

Despite its name, heat tape isn’t sticky tape in the traditional sense, rather it is an electrical heating cable that is widely used to keep at-risk plumbing piping from freezing in the winter. You can think of it like an electric blanket for a pipe – since the heat tape uses electrical resistance to produce a measured and controlled release of heat along its length.

There several different kinds of heat tape. The simplest is called non-regulating heating cable, which can be purchased by the foot, and plugs into a wall outlet. Using this type of heat tape in unattended situations is usually not recommended as it puts the house at greater risk for fire. Heat tape fires may occur if non-regulating tape is left on during periods with warmer temperatures, during spring and summer for instance – particularly if the heat tape is well insulated. If a malfunction occurs, heat levels could increase in and around the tape faster than they can dissipate. If you have this type of heat tape in your home, make sure to unplug it when the outside temperature warms above freezing, and consider replacing it with a self-regulating version.

Self-regulating heating cable, on the other hand, automatically varies its heat output with changes in surrounding temperatures. It can also be cut to custom lengths. Finally, there are automatic electric heat cable kits that self-regulate and are also controlled by a thermostat, so they only turn on at a certain temperature. Both of these types of heat tape can be wired to plug into a wall outlet, but you may want to have them hardwired directly into an electrical circuit if there is a risk they may accidentally get unplugged. The breaker to the circuit can still be used to turn off electricity to the heat tape during the warmer months.

Heat tape should be installed by a licensed electrician. An electrician will be able to safely hardwire the heat tape into an electrical circuit and also install it correctly around a pipe. For easily accessible pipes, heat tape won’t take very long to install. If your pipe is located in an inaccessible location, you should budget extra time. After installation, ask your electrician about insulating the pipe with a pipe insulation jacket. If required, you may need weather-protected insulation to prevent your heat tape from getting wet. Properly installed insulation will make the heat tape more effective by ensuring that the heat reaches the pipe instead of leaking to the atmosphere.

Each fall, it’s important to inspect your heat tape for fire hazards if possible. Heat tape should not be overlapped onto itself (even if you buy a type that advertises that it can be overlapped) as this could overheat the tape and start a fire. Heat tape can also be a fire risk if it touches combustible materials such as wood, as prolonged heating eventually decreases the ignition point of the material. Make sure the heat tape isn’t worn or frayed – again, this could result in a fire if the tape overheats. Finally, ensure the heat tape is not installed on a leaking pipe. A leak can short the heat tape.

While heat tapes will prevent pipes from freezing, they are not a perfect solution. For one, they must be installed properly to prevent potential fires. Second, not all types of heat tape can be used on plastic pipes because they may cause them to melt. Finally, they cost money to run, which is especially problematic in areas with high electrical costs. For example, heat tape may draw 5 Watts of electricity per foot. If the tape is 6 feet long, it will use 30 Watts when heating the pipe. To run this tape for one day, a homeowner would use 0.72 kilowatt-hours (kWh), which would cost 14 cents at $0.20/kWh (approximately the current rate in Fairbanks – October 2013), or approximately $20 for 4 months. While this is not a lot of money to heat one pipe, the price could rise quickly if a house requires heat tape for
multiple pipes. And if the power goes out for an extended period of time, the homeowner may be looking at frozen pipes that are costly to thaw out.

The best way to eliminate the need for heat tape is to ensure that water pipes are properly insulated and, when possible, located within the heated interior of a home. If you are past the building phase, buying a sophisticated heat tape with a thermostat and self-regulating electrical draw will prevent you from having to pay for unnecessary heating when the temperature is above freezing.