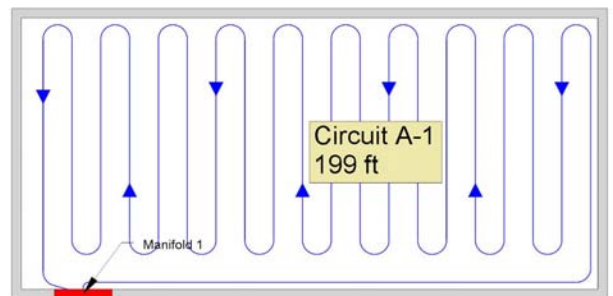


Many people ask the question “how can I install radiant heat if I don’t have access to the floor from below?” One way is to go with a manufactured grooved board system that you can put down and simply lay the Pex in it. These products (which we do carry) typically have a layer of aluminum on the surface to assist with the heat transfer. While these products work very well they all have one common fault: they are just too expensive for the average homeowner to even consider at prices of \$8-\$10 per square foot. This price doesn’t even include any of the radiant material.

Radiantec has come up with a practical alternative to these expensive products. If you are a competent do-it-yourselfer and don’t mind working with power tools then you can install a highly efficient radiant heating system on top of your existing floor for a fraction of the price for the manufactured panel systems. This supplement will show you how.

PLAN THE INSTALLATION

Make a layout and decide how many circuits you should have in each zone based upon minimum and maximum circuit lengths. When you purchase Radiantec material, we’ll help you figure this out. You’ll receive a comprehensive worksheet that comes with your price quotation describing the tube spacing, how much tubing should go in each zone, how many circuits you should have, and roughly how long each circuit should be. **Keep in mind that it is up to the installer to confirm these recommendations made by Radiantec since he will be on site and we are not.** Check with Radiantec if you make changes to our recommendations because any changes could affect pump sizing.



CUT THE BORDER

You first want to start by “picture-framing” the room which basically means that you will install a 4” wide strip all of the way around. This will make sure the first run of tubing isn’t too close to the wall and also gives you something to nail your flooring into if necessary. To do this simply rip 4” wide strips of plywood and screw them down around the perimeter of your zone.



LAY DOWN THE STRIPS

Now it's time to cut and lay down the strips onto the subfloor. We typically recommend a tubing spacing of 12" on center for this application so assuming this, rip the plywood into 11 5/8" wide strips. The spacing can be tighter if the area requires more heat. Regardless of the spacing, cut the strips 3/8" narrower than the recommended tubing spacing.

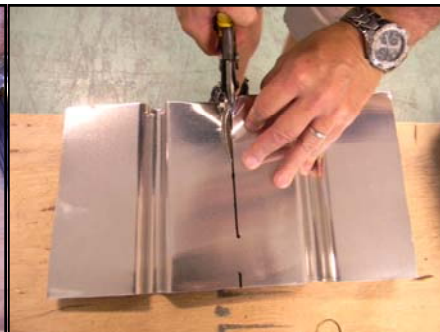


Using a piece of the 3/4" plywood for a spacer, screw the strips down leaving a 3/4" gap between them. At the end of the run where the tubing will turn 180 degrees, end the plywood strip about 12" away from the picture frame. This will allow for the tubing to bend and you'll fill in this area during a later step.



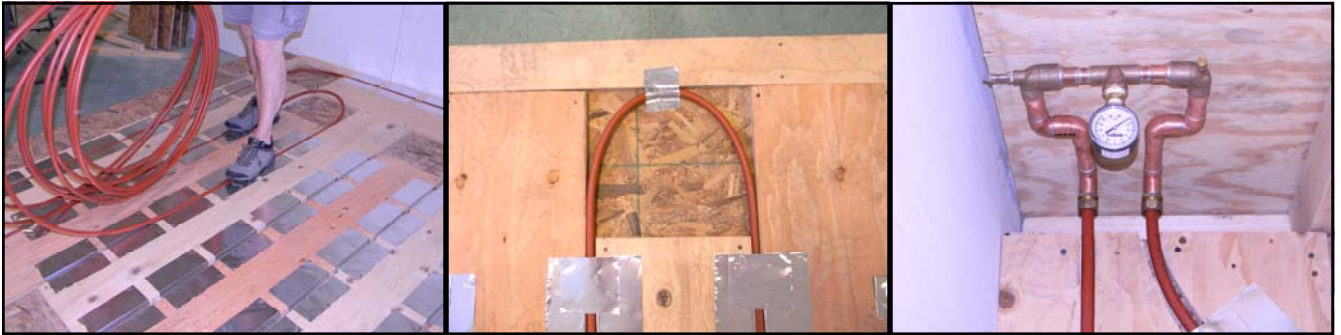
INSTALL THE ALUMINUM HEAT EMISSION FINS

We like to use the double groove aluminum heat emission fins for this application because they are designed for the smaller tubing. You will have to cut the plates in half using tin snips. Some people will score the plate with a sharp utility knife as well. Now that the fin is cut, install them into the groove and staple them down to the floor. 4-6 staples per fin will be adequate. You will want to put the plates in what we call "continuous coverage" leaving only a gap of about 1/2" between them.



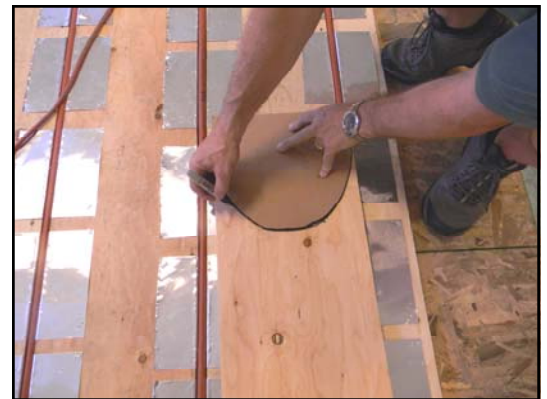
INSTALL THE TUBING

We typically recommend using Pex-Al-Pex for this installation because it has an aluminum core that allows it to hold its shape well. Attach one end of the tubing to the manifold and walk away, unrolling the tubing as you go. Step the tubing down into the groove. A strip from one of the aluminum heat emission fins can be stapled over the top of the tubing to hold it in place when necessary. Following your layout, return back to the manifold and attach the end to the manifold. Once all of the tubing is installed in the grooves, it is time to fill in the around the bends.

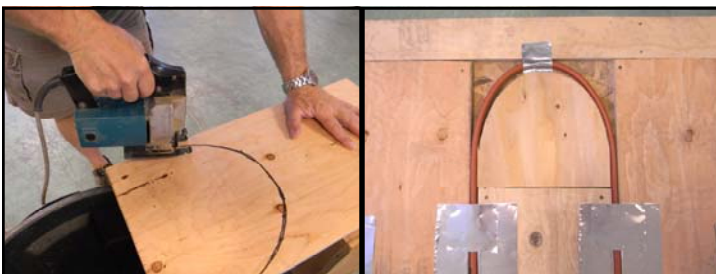


FILLING IN AROUND THE BENDS

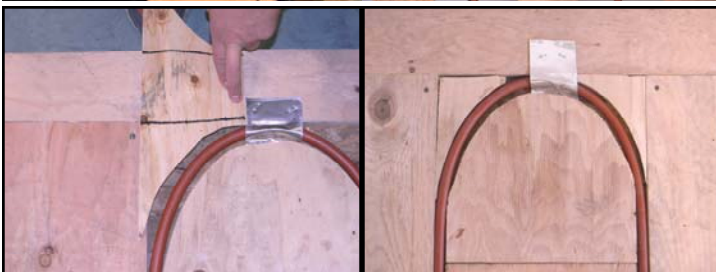
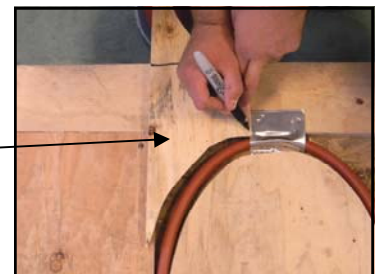
Now that the tubing is in, it's time to fill in around the bends. You will make a jig by taking a square piece of cardboard, placing it under the tubing so that it fills the square. Next, take a marker and trace the bend on the inside of the tubing. Cut around the line leaving you with a piece of cardboard with a half circle.



Take this piece of cardboard and place it down on a piece of plywood and trace it. Take a jig saw and cut around the half moon. Now take this piece of plywood and put it back in place on the inside of the tubing bend. To fill in the corners, follow the pictures below.



Use the leftover pieces from when you cut out the half moons.



Cut some plates into small pieces and slip them under the tubing as shown here.



PRESSURE TEST THE TUBING

You are now ready to pressure test your tubing. You will need an air compressor with a valve stem attachment (what you use to blow up a tire). Connect the air hose to the manifold and test up to at least 50 psi. Watch for about 10 minutes; there should be no drop in pressure. If there is, tighten the fittings and test again. We do like you to keep the tubing under pressure overnight. You could see a 4-6 psi drop in pressure just due to temperature change in the building.



INSTALL YOUR FLOORING

Now that the tubing is in and pressure tested, it is time to install your flooring. In many instances, if this will be a hard surface floor, there is no need for an underlayment. If you plan on putting down carpet or vinyl then you will want to put down a thin layer of plywood or “luan” first and then follow with your flooring material. Keep in mind that carpet is an insulator so you will want to keep the carpet and pad to a total thickness of 1” or less (3/4” carpet and 1/4” pad).



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