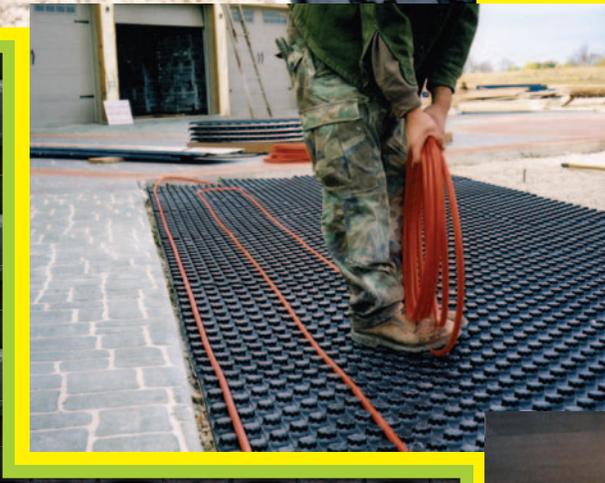




FLOOR, INC.

Installation & Technical Guide



3EZ STEPS
PLACE • INSTALL • POUR

Insulated Floor Panel Systems

EZ Floor Panel – Installation Training



PROPERTIES

- The EZ Floor Panel is 2 7/8" thick overall with a solid 2" of expandable polystyrene (EPS) foam providing a thermal resistance or R rating of 11.9.
- The compressive strength of the foam is 860 pounds per square foot.
- The thermoformed film has a perm rating of .56 perms.

The EZ Floor Panel is an easily installed vapor barrier, insulation board, and PEX tube holder all in one. This product allows for simple installation of hydronic radiant floor heating systems that today primarily consist of garages, basements, and slab-on-grade installations where concrete is used.

TERMINOLOGY		Groove	Tongue
<p>Knob The high spot on the panel that holds the PEX tubing in place</p> <p>Flat Those areas on the top of the panel that have no knob</p>		<p>The part of the panel that receives the tongue</p>	<p>The part of the panel that overlaps and interlocks with the groove</p>

TECHNICAL SPECIFICATIONS

All testing was done by Warnok-Hershey's ETL Semko. ETL Semko is an independent laboratory that performs product testing in North America and Europe.

The **EZ Floor Panel** insulated floor panel system from EZ Floor, INC. is insulation, vapor barrier and PEX tube fastener all in one. Easy, three-step installation means you could save up 66% of the insulation cost on energy-efficient in-floor radiant heat! For more information, contact your area EZ Floor representative or visit us on the web!

2" Grid for 1/2", 5/8" or 3/4" PEX Tubing	
Board Size	25" x 49"
Effective Area	24" x 48"
Nominal Thickness of Insulation	1" - 2"
Total Thickness	1 7/8" - 2 7/8"
Color	Varies
Thermal Resistance (ASTM C518-04)	R-5.9, R-11.9
Compressive Resistance (ASTM C165-00)	430-860 psf
Perm Resistance (ASTM E96-00)	.56 perms
Wisc. Building Products Evaluation No.	200521-I

PEX TUBING

The current model of EZ Floor Panel, part number RAZ 100278, will accommodate 1/2", 5/8" and 3/4" PEX tubing.

Future models will vary in thickness as well as the diameter of the PEX they can hold.

EZ FLOOR, INC. PANEL INSTALLATION

Estimating the number of panels

- Multiply the length times the width of the structure, say its 40' x 60' which equals 2400 square feet.
- The panels are 8 square feet. Divide the 2400 by 8. You get 300 panels required for the job.
- Panels are bagged in sets of 10. You must further divide to determine the number of bundles, 300 panels divided by 10 equals 30 bags (300/10 = 30). Round up to the nearest whole number when fractions are encountered to determine amount of bags required.

Installation Basics

Although not imperative, attending an installation training course on radiant heating is a good idea. There are some fantastic products out there today, and by attending a training session, you get to learn about them as well as how to do the best job possible for the all-important customer. Some states require certification for installers, so why not get the jump on the competition?

Leveling

Fill material should be leveled as close to +/- 1/2" as is reasonable. One of the benefits of using the panel is that the 2' x 4' panels will float independently of the surrounding panels thereby eliminating broken foam boards and trip hazards. You can also level as you go if you feel comfortable with the beginning grade of your fill material.

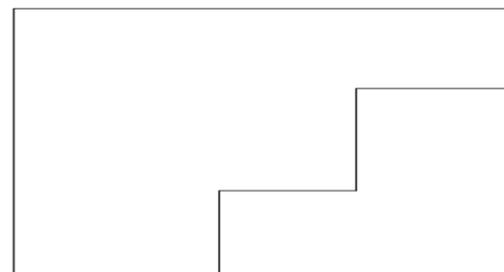
Fill Material

There are many different materials used as fill in sub-slab radiant heat applications. Crushed limestone, sand and gravel are just a few. Although any material commonly used will work with the panels, sand seems to be the easiest to level.

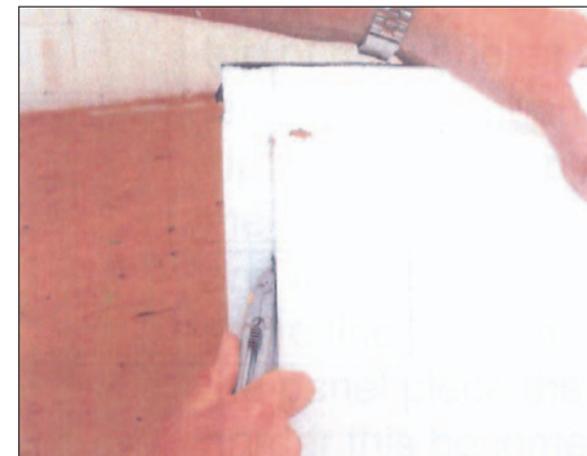
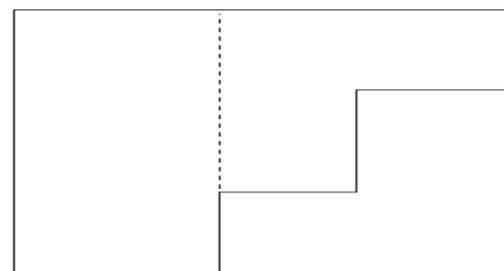
Determining the Layout

Rectangular structures offer no real challenges in determining which direction you will work in laying out the EZ Floor Panels. If one of the dimensions is evenly divisible by two or four, work along that dimension.

Structures with irregular exterior walls will require you to think a little about how best to proceed. The basement plan to the right illustrates this thought. Assuming that the top of the drawing is north, take a few minutes to think about which is the best direction to lay the panels. Keeping cuts to a minimum should be your primary concern. The west to east dimension is 40 feet. The north to south dimension is 25 feet.

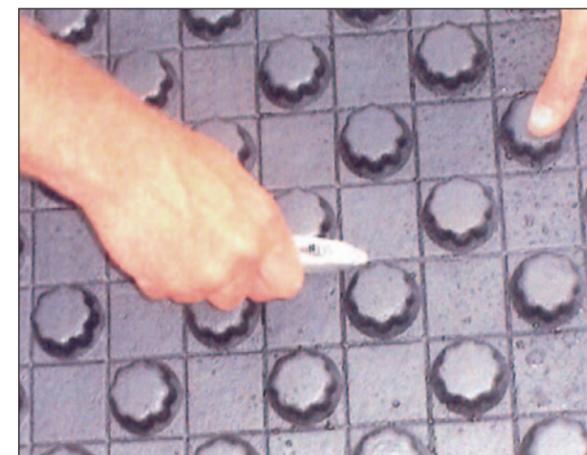


The largest portion of the structure that can be divided into a perfect rectangle is the western half. It would be most efficient to start in the southwest corner working north from left to right. The cut end at the end of the first row will be used to begin the next row.



Getting Started

Using a box cutter or key hole saw, cut the tongue portion of the interlock off of the 4' dimension going along the west wall as well as the tongue portion that will butt up against the south wall.



Cutting Panels

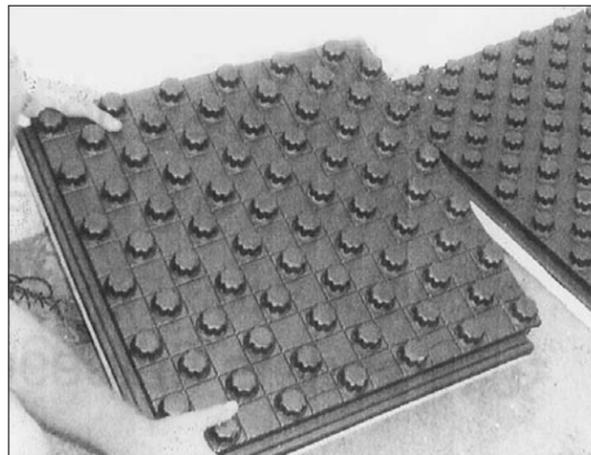
Cutting full panels is very easy. Simply score the top of the panel at the length you want and then flip it foam side up and hit the panel on the ground and it will break along the score line. The smaller the panel piece, the more difficult this becomes. This is when you will use your keyhole saw.



Continue placing trimmed panels until you get to the north wall. You will most likely need to cut the final panel in this row to fit into place.

Place the panel with the 4' length along the west wall and cut the end of the 2' length against the south wall. Successive panels to be placed in this row now only need the tongue along the 4' dimension trimmed. Place trimmed panels so that they interlock along the 2' dimension. Doing this ensures that you get a tight fit next to the wall with a solid 2" of foam and eliminates any air gap. The grooves of the panels should always be at the bottom of the 4' dimension and to the right on the 2' dimension.

Take the remainder of the panel that was cut in the previous step and return to where you began in the first row. Place the cut panel from the previous row as the first panel in the second row. The reason for this is two-fold. First, we want to make sure that we stagger the joints where panels come together to avoid common seams. Second, we want to minimize waste.

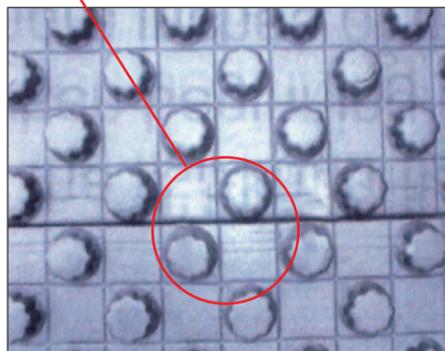


If the flat-knob-flat sequence is interrupted when beginning a new row, simply cut two more inches of the panel off. This will get the sequence back in proper order.

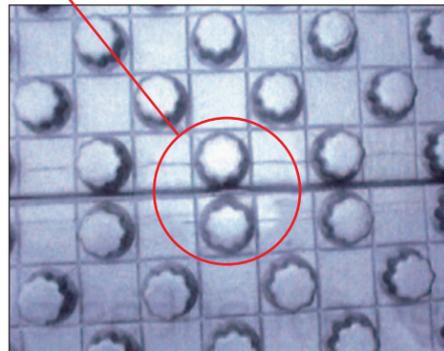
NOTE

The panels are divided into 2" squares. Each square either contains a knob or a flat and they alternate every other square. When placing the first panel of a new row, you must check to verify that from row to row, this alternating sequence of knob-flat-knob is not interrupted. Otherwise it could cause difficulties when laying the PEX tubing.

YES



NO



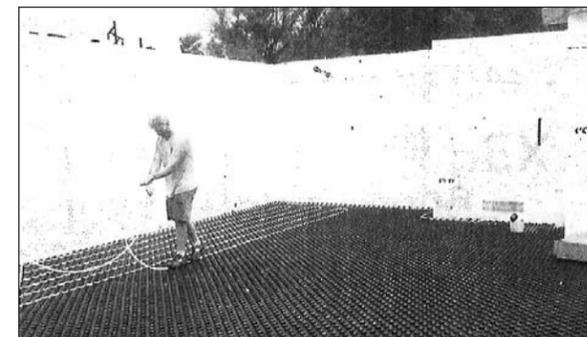
It is not required, but a good idea, to walk along the interlock area of the panels (after each couple of rows) to ensure that the panels are locked together.

Now it is simply a matter of repeating this process until you have fully installed the EZ Floor Panel throughout the entire area to be heated.

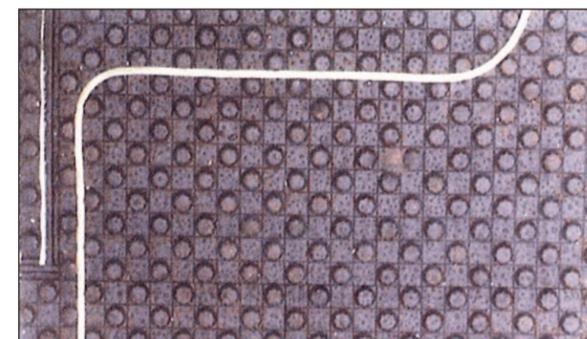


INSTALLING PEX TUBING

At this point you can send the installation crew on to other jobs. Installing the PEX should be a one-person job. It is highly recommended that you use a spool to hold the PEX tubing. Otherwise another person may still be required.



The only tip about making the PEX installation easier is that when making a turn, ensure the PEX is fully seated in the knobs before beginning or continuing a run. Other than this tip, installation is as simple as walking the tube in place.



Spacing the PEX

It is extremely easy to ensure that your runs are properly spaced. Simply count the number of knobs and flats and multiply by 2 to get your 6, 8, 10-inch or whatever distance centers.



CONCRETE PLACEMENT

One of the many benefits of the EZ Floor panel is that the PEX tubing is below the working surface of the foam. So, if the installer is not the same person placing the concrete, you don't have to worry about the crew walking on the panels during the pour. The tube isn't going to pop up, nor is it going to be kicked out of place or rolled over with a wheelbarrow full of concrete.

Concrete is finished and placed the same as on any other job. Wire mesh and rebar can be laid directly on top of the panels if it is called for.





FLOOR, INC.

Insulated Floor Panel Systems



Of the very few negative responses that I have received regarding this product, the one that I find most humorous is this one:

“Contractors are too rough on the product. I don’t think this can stand up to the handling and foot traffic.”

I hope the following photographs prove otherwise.



WHY BUY?

1. Does the job of three items: the foam, the vapor barrier and the staples or zip ties. This means fewer items to estimate, remember to purchase, and take to the job site. You will never run out of items toward the end of a job, day, or week.
2. Panels are bagged in sets of 10. They are easy to move around the site and store. No more getting blown around by the wind while handling 4' x 8' sheets and having to find a large rock to weigh them down.
3. Competing “tarp” type products provide no R-value in a sub-slab environment due to compression by the concrete. You must purchase and handle wire mesh and then bend over and zip tie PEX tubing to mesh or staple through your vapor barrier thereby degrading its effectiveness.
4. 4' x 8' sheets are cumbersome to handle. They create a trip hazard where sheets must meet because they do not lie flat.
5. PEX tubing sits on top of the sheet creating a trip hazard and is susceptible to damage from foot or equipment traffic.
6. Tremendous labor savings! One person PEX installation allows other workers to move onto other projects, reducing overhead.
7. PEX tube spacing is exactly on 2” increment centers. No more close-enough.
8. No duct-taping required. No balky staplers to fail you.
9. Minimal waste.
10. Marked 2” increments make for ease of exact cutting.
11. NO-COST MISTAKES! With other methods, an error in placing a run means damaged foam, wasted staples, and a lot of wasted labor. With the EZ Floor Panel, you simply pull the tube up, place it where you need it, and walk it back in. Minimal added labor costs and no damaged, unusable product or components.

For more information call 608.391.0290

or

Visit us online at www.ezfloor.com

The EZ Floor Panel is very easy to use and durable. It reduces inventory you have to purchase and carry...making life easier for everyone involved in the project.