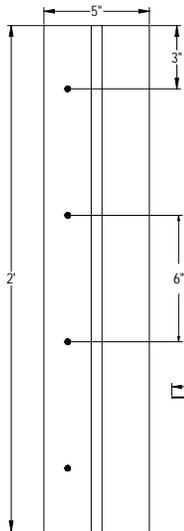


Installation Bulletin: PEX Plates for Underfloor Applications

Watts Radiant offers one type of aluminum plate for PEX underfloor and PEX sandwich applications. Each plate is 5" x 24" with a single channel to accommodate 1/2" E-PexB. No other sizes of PEX or Onix should be used for this plate.

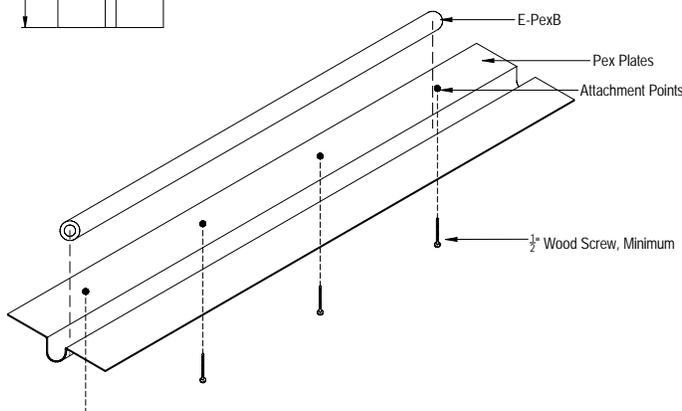
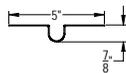


Caution:

Watts Radiant does not guarantee noise will not occur with the use of plates. To help reduce the possibility of noise, follow these instructions carefully. Also, "on/off" systems are much more likely to cause ticking sounds as the PEX and aluminum plate expand at different rates. Therefore, it helps to design the mechanical system for constant circulation with outdoor reset control.

Overview

For 16" or 24" o.c. joists, plates and PEX are installed minimum 8" o.c. side by side with 4" distance between plates along the run of the pipe. See Note for 12" o.c.



Underfloor Installation

We recommend the following procedure, installing one joist bay at a time.

1. Drill holes in the sides of the joist as shown in diagrams below. Check local building codes for hole size or location restrictions or recommendations.
2. Thread the PEX into the joist bays, beginning with the furthest bay from the manifold.
3. Temporarily attach the PEX to the subfloor at the end and at roughly 8" centers along the run of the pipe using Watts Radiant LockDown fasteners. Work out the twists in the PEX at both ends of the joist bay - you want the PEX to enter the plate in a straight line, so it won't rub the sides of the groove and cause noise.
4. Apply a 1/4" bead of silicone caulk down the length of the PEX channel before installing the PEX. Do this for several plates. Let the silicone set up for a short period of time, so it doesn't drip while being installed. Silicone will increase the heat transfer

between the PEX and the plate, and it will help prevent possible noise associated with thermal expansion of the PEX and aluminum. Do not use any other type of caulk or glue.

5. After the silicone becomes tacky, snap the PEX into several of the plates at the farthest end of the joist bay. Install the plates with roughly 4" between plates.
6. Now attach **one side of the plate** with four 1/2" screws as shown and let the other side "hang". Do not install screws on both sides of the plates - this will allow the plate to expand. Install the plates with 4" distance between plates. Do this for the entire joist bay attaching two plates, side by side, leaving the PEX installed 8" on center.

Refer to your design information for any deviation from this spacing.

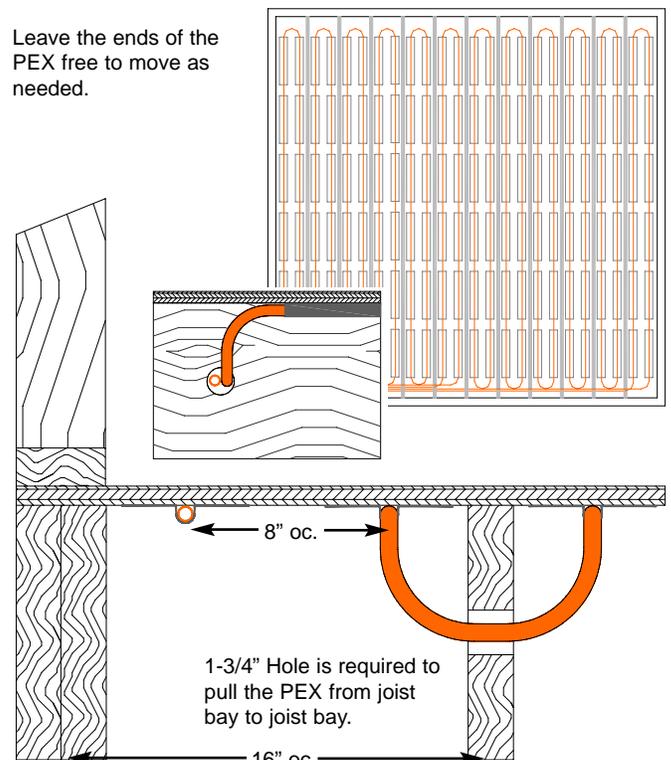
Note: For joists spaced at 12" o.c. edge of plates may need to overlap to accommodate the area provided.

7. Install plates across the entire subfloor, then install insulation. Install foil-faced insulation, 2-4" below the subfloor, minimum R-11 between heated floors and R-19 in a crawl space installation. See design for details.

Note: Pressure test the system for 24 hours at 50-100 psi before installing insulation.

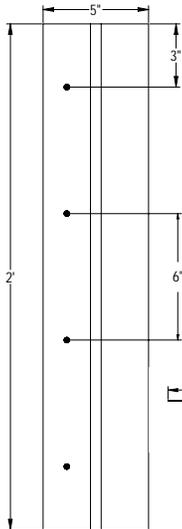
Description	Part Number	List Price
Pex Plates, pkg 25	P700524-25	\$94.00
Pex Plates, pkg 100	P700524-100	\$330.00

Leave the ends of the PEX free to move as needed.



Installation Bulletin: PEX Plates for Sandwich Applications

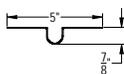
Watts Radiant offers one type of aluminum plate for PEX underfloor and PEX sandwich applications. Each plate is 5" x 24" with a single channel to accommodate 1/2" E-PexB. No other sizes of PEX or Onix should be used for this plate.



Caution

Watts Radiant does not guarantee noise will not occur with the use of plates. To help reduce the possibility of noise, follow these instructions carefully. Also, "on/off" systems are much more likely to cause ticking sounds as the PEX and aluminum plate expand at different rates. Therefore, it helps to design the mechanical system for constant circulation with outdoor reset control.

Overview:



Furring strips (nailers) are nailed and glued to subfloor at 8" o.c. across the floor, leaving a 1" gap between strips. PEX plates are then attached to the nailers and the PEX is snapped in place.

any other type of caulk or glue. Do this for two or three lengths of plates depending on how fast you can install the PEX. Silicone will increase the heat transfer between the PEX and the plate, and it will help prevent possible noise associated with thermal expansion of the PEX and aluminum.

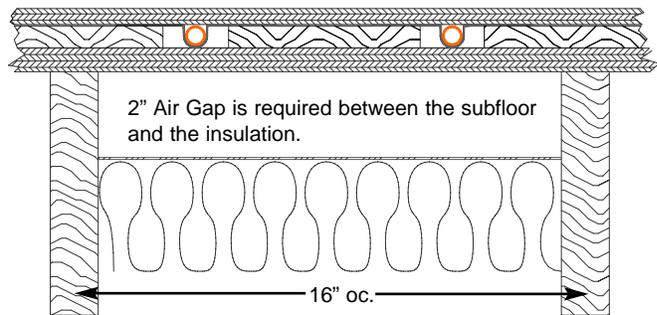
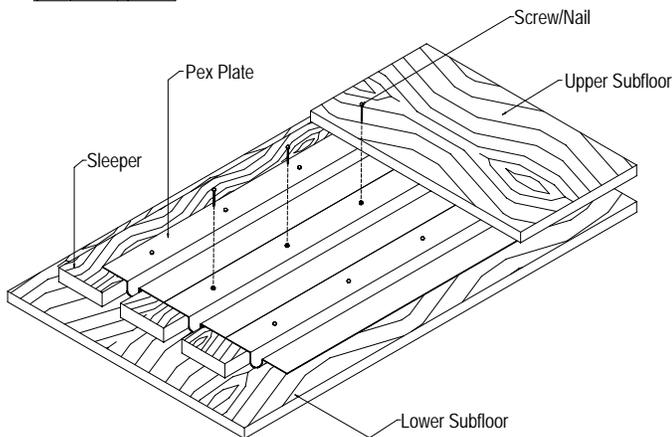
5. Snap the PEX into the several of the plates at the farthest end of the room. Work out any twists in the PEX as you go - you want the PEX to enter the plate in a straight line, so it won't rub the sides of the groove and cause noise.

Any "dead spots" in the floor must be filled in with furring strips so that the overlying subfloor or finished floor has a substantial base for attachment.

Install insulation below the floor, if possible - minimum R-11 between heated floors and R-19 in a crawl space installation. Unfaced insulation is fine - foil facing is not necessary. See design for details.

Note: Pressure test the system for 24 hours at 50-100 psi before installing the overlying subfloor or finished floor.

Description	Part Number	List Price
Pex Plates, pkg 25	P700524-25	\$94.00
Pex Plates, pkg 100	P700524-100	\$330.00

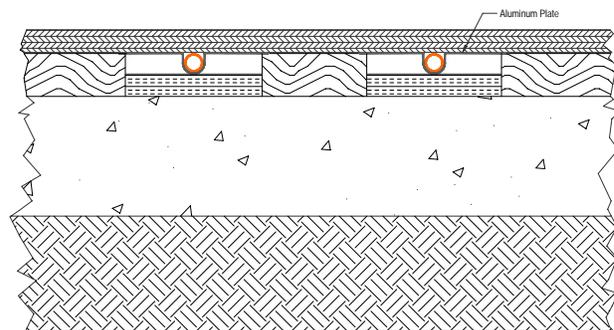


Typical frame floor installation: 1" sleepers are used to support the plates every 8" oc. Insulation is required in the joist cavity to ensure proper heat delivery to the space.

Sandwich Installation

We recommend the following procedure:

1. Cut nailers roughly 1" x 6".
2. Install nailers (glue and screw or nail) parallel to the longest wall across the floor leaving a 4" gap between strips. You may want to install nailers perpendicular to these strips at the manifold end of the room. The number and distance of these nailers will depend on the number of PEX circuits in the room (or zone). A little bit of planning will go a long way for this type of installation.
3. Next, attach PEX plates to the furring strips. Attach only on one side of the plate, as shown, to allow for expansion of the plates.
4. When you are just about ready to install the PEX, apply a 1/4" bead of silicone caulk down the length of the PEX channel. Do not use



Typical slab floor installation: 2"x4" sleepers are used to support the plates every 8" oc. Board insulation, typically 3/4" Extruded Polystyrene, is required between the sleepers to ensure proper heat delivery to the space.

UNDERFLOOR APPLICATION

Watts Radiant

Radiant Floors & Snowmelting

Ph: 417/864.6108

Fax: 417/864.8161

GENERAL NOTES:

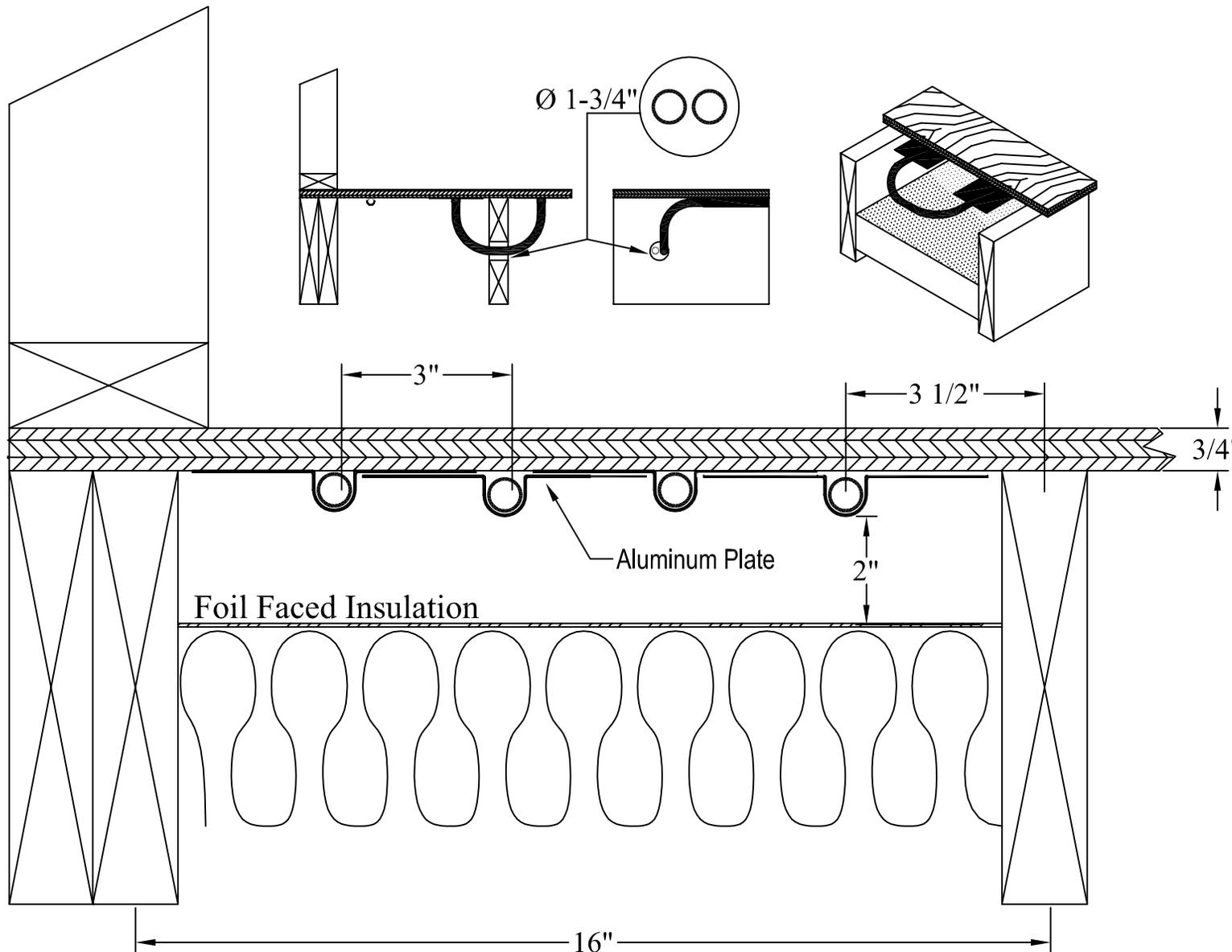
Cross sections are intended to illustrate typical radiant installations. Floor construction details shown are to be used for illustrative purposes only, not for actual construction. Structural details will need to be determined by the project engineer, architect or other.

SPECIFIER INFORMATION:

ONIX CROSS SECTIONAL DETAILS:

General Legend

-  Concrete (Thin Slab)/ Mud
-  Joist/Sleepers
-  Plywood
-  Sand Fill
-  Board/Batt Insulation
-  Gravel Bed/Earth Fill



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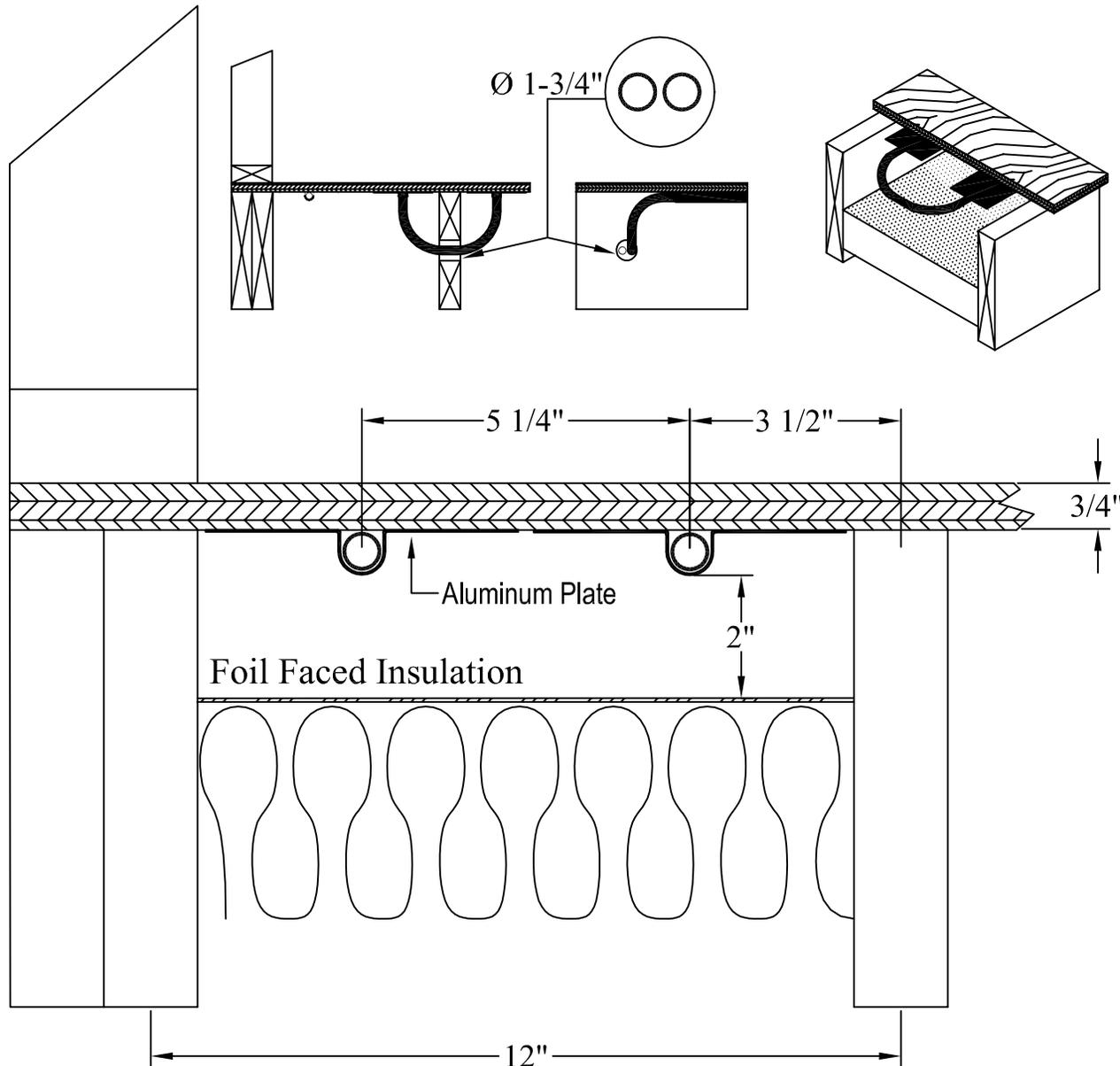
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