

June 2015

AmPEX Insulated Panel for Radiant Heating

Technical Bulletin: PEX pipe location in a concrete slab.

The **AmPEX Insulated Panel for Radiant Heating** was designed to provide the most cost effective installation and performance characteristics for Hydronic Radiant floor heating systems. AmPEX is a combination of expanded polystyrene (EPS) rigid insulation moulded to High Impact Polystyrene (HIP) film, this combination makes for a strong, resilient interlocking panel for radiant heating.

In the installation process, the subgrade should be compacted, flat and smooth, there is no need to add an additional vapour barrier or vapor retarder as AmPEX is an approved vapour barrier and vapor retarder. The AmPEX panel is then placed according to the installation instruction.

The mushroom shaped nubs are designed to lock the PEX pipe firmly in place including at all bends by walking the PEX tubing into place using combinations of 3" spacing. Once inserted the pipe will be properly positioned and seated into the panel. The innovative patented panel design ensures that the pipe will be completely encased in concrete and not pushed to the bottom of the panel as some competitive product do. This will allow for the proper heat distribution of the radiant system and more efficient energy transfer.

If the structural design requires, welded wire mesh (WWM) or reinforced steel (rebar) is placed on top of AmPEX, the location on top of AmPEX is ideal as it will be flat, level and will not be touching any of the PEX Pipe, this position will also provide improve thermal efficacy and reduce energy consumption.

There are several effects to consider when deciding where to locate the pipe within the slab.*

- Pipe located closer to the bottom of the slab will result in a more even surface temperature.
- Pipes may be installed at the bottom of the slab for medium –thick slabs (3 to 4"***).
- Pipe located closer to the bottom of the slab will be better protected from operations that may require drilling into the slab, or from saw cuts for expansion joints in the slab.
- Pipe located closer to the top of the slab may result in “hot spots”.
- Pipes located closer to the top of the slab will give the radian system a faster response time
- Maximum fluid temperature for radiant pipes within concrete is 140°F (60°C), unless otherwise approved

The Amvic Insulated Radiant PEX panel is designed to save time and labor cost with the installation and preform more efficiently once installed.

*General recommendations for heated slab systems provided by Rehau.

**3" Concrete thickness requires 0.0103 cubic meters / 0.0135 cubic yards /per square foot

**4" Concrete thickness requires 0.0127 Cubic meters / 0.0166 cubic yards / per square foot.

