

# INSTALLING MrPEX® TUBING

## INSTALLING THE TUBING

Now that you are ready to install the tubing, take a minute to decide which loop to start with first. Typically, working your way from left to right as you are facing the manifold is a good general guideline. Mark the area in front of the manifold to make sure all leaders fit without getting too crowded or crossed. No joints should be made in tube installed within inaccessible areas unless the type of joint is approved by MrPEX® for that application. For repairs, please see pages 60–65.

- › The tubing loop length, spacing and layout pattern is designed to meet the heating and comfort needs of the occupants at design condition. All attached mechanical equipment is sized to support those needs. If a loop's length, spacing or pattern is changed from its design, it may have an adverse impact on the performance of the system. Use the following recommendations as a guideline unless otherwise specified in a MrPEX® design document.

GENERAL LOOP LENGTH GUIDELINES		
TUBE SIZE	RECOMMENDED	MAXIMUM
3/8" I.D.	200 feet	250 feet
1/2" I.D.	300 feet	350 feet
5/8" I.D.	350 feet	500 feet
3/4" I.D.	450 feet	600 feet
1" I.D.	500 feet	750 feet

*NOTE: Loop lengths are designed to deliver a certain heat load at a given temperature drop and pressure drop. The higher the heat load requirement, the higher the flow, resulting in a higher pressure drop. Shorter loops are required for higher heat loads. But if the heat load is low, the loops can be longer.*

GENERAL TUBE SPACING AND LAYOUT PATTERN GUIDELINES*		
	RECOMMENDED	MAXIMUM
Embedded in Slab	6–12"	12"
Poured Underlayment	6–12"	12"
Heat Transfer Plates Above Subfloor	6–12"	12"
Between Joists	8"	8"

*\* Spacing shown is only a guideline. In many cases, the tube spacing in front of windows will be tighter to accommodate the higher heat-loss while the rest of the room will remain at normal spacing.*

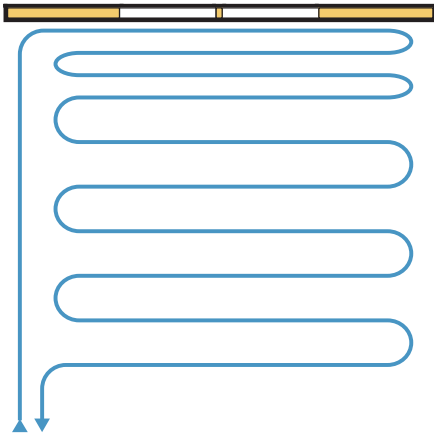
*NOTE: This chart is for indoor radiant heating (not snow melting) applications. Tube spacing may need to be closer in high heat-loss areas by windows (check with designer) and in barefoot areas such as bathrooms where surface temperatures need to be extremely even.*

*TIP: If MrPEX® LoopCAD design software is used, you can easily try different scenarios to see how it affects the system pressure drop, flow, and water temperature.*

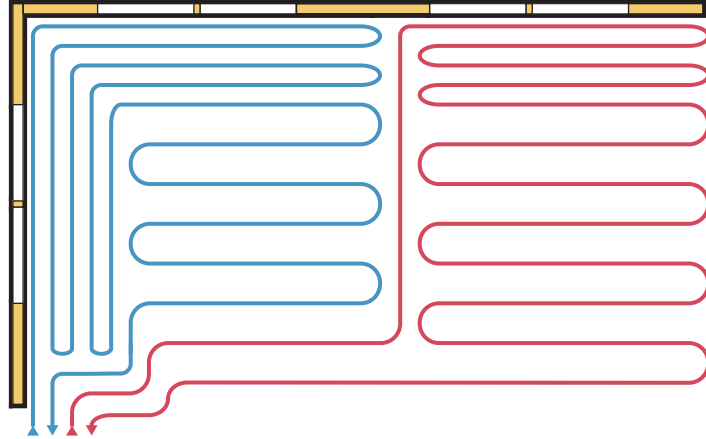
## COMMON LAYOUTS

The tubing layout pattern is selected to meet the heat loss and use pattern of the room. The heat loss of a room is always greater at the outside walls or by large windows, and gets gradually less as you move towards the inside of the room. The most common pattern is the Serpentine layout. This pattern sends the warmer supply water to follow the outside wall where the need is the greatest, and then serpentine back towards the inside of the room. Since the flow of the warm water is designed to allow it to only drop between 10° F - 20° F from the beginning of the loop to the end of the loop, it actually then better matches the heat loss profile of the room. The spacing of the tubing is also determined by the heat loss, but also by surface floor covering and the needs of the home owner. The higher the heat loss, the closer the spacing required. However, in areas where you will walk barefoot on a tile floor, a 12" spacing may actually not be the best even if the heat loss is low, only because you could possibly feel the difference between the pipes. This is typical for bathrooms.

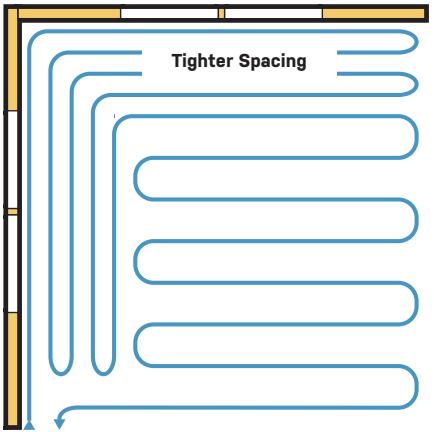
See the "Common Layouts" below. This gives you some ideas as to which pattern to use for your project. Also keep the "General Loop Length and Spacing Guidelines" from previous page in mind.



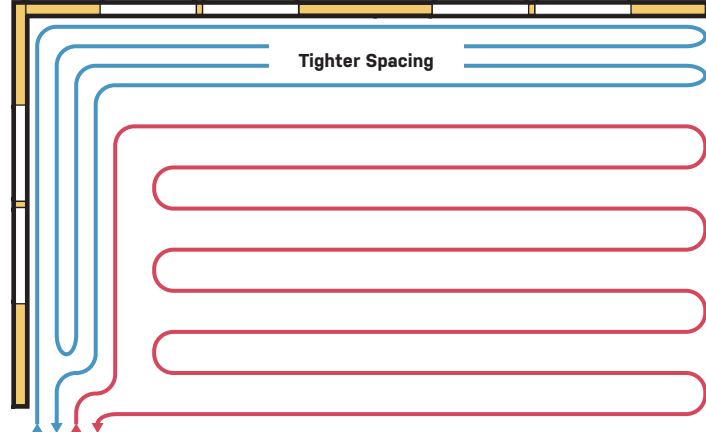
Single-Wall Serpentine



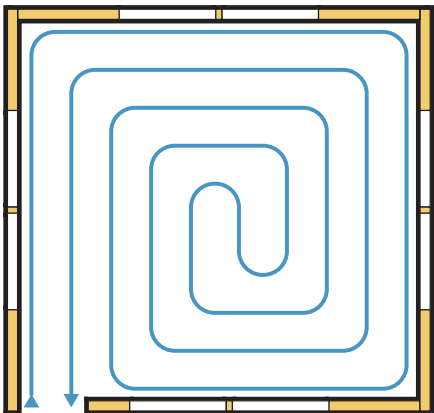
Two-Wall Serpentine. Two Loops Vertical.



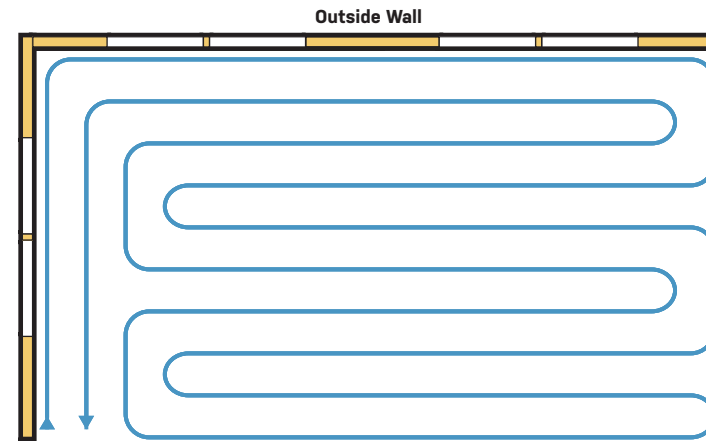
Two-Wall Serpentine



Two-Wall Serpentine. Two Loops Horizontal.



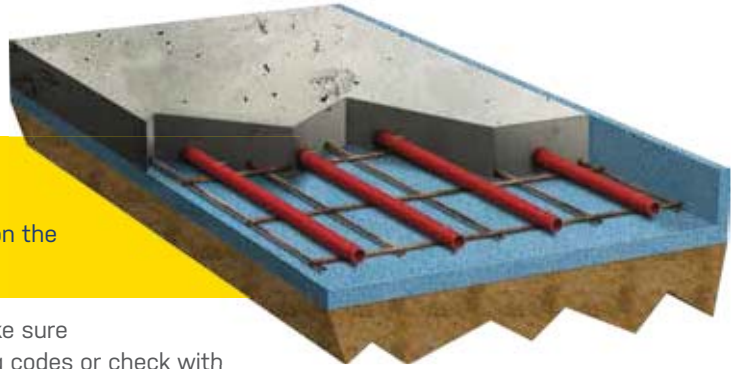
Counter-Flow Spiral



Counter-Flow Serpentine

## SLAB ON OR BELOW GRADE WITH INSULATION

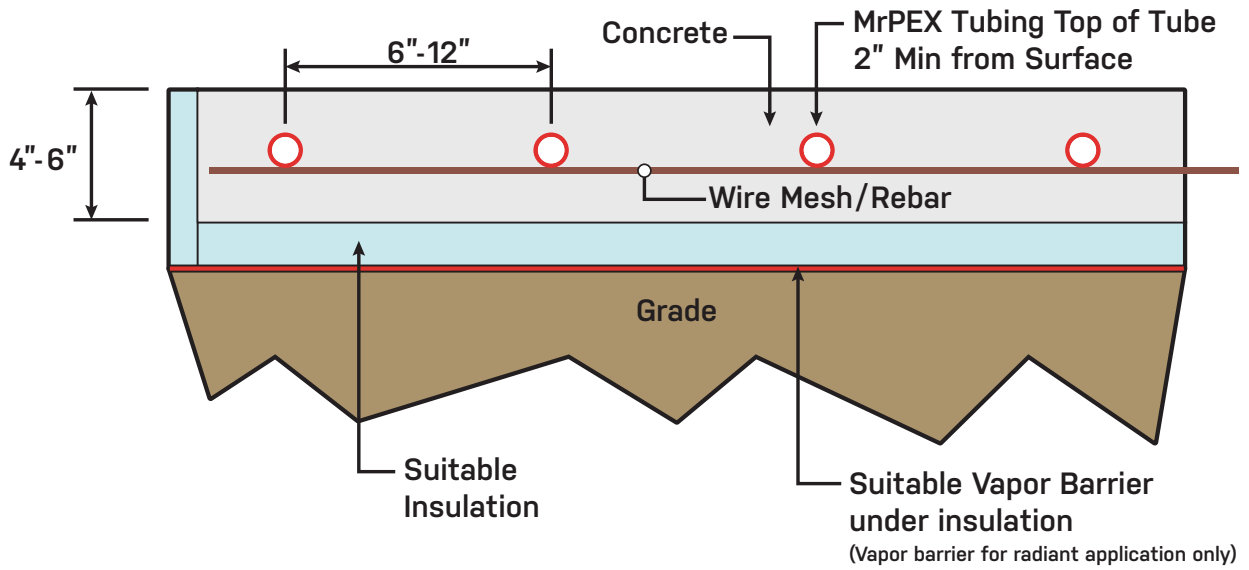
*NOTE: Use MrPEX® Design Software to establish heat loss for the structure, and to calculate output, surface temperature, water temperature and tubing/manifold pressure drops.*



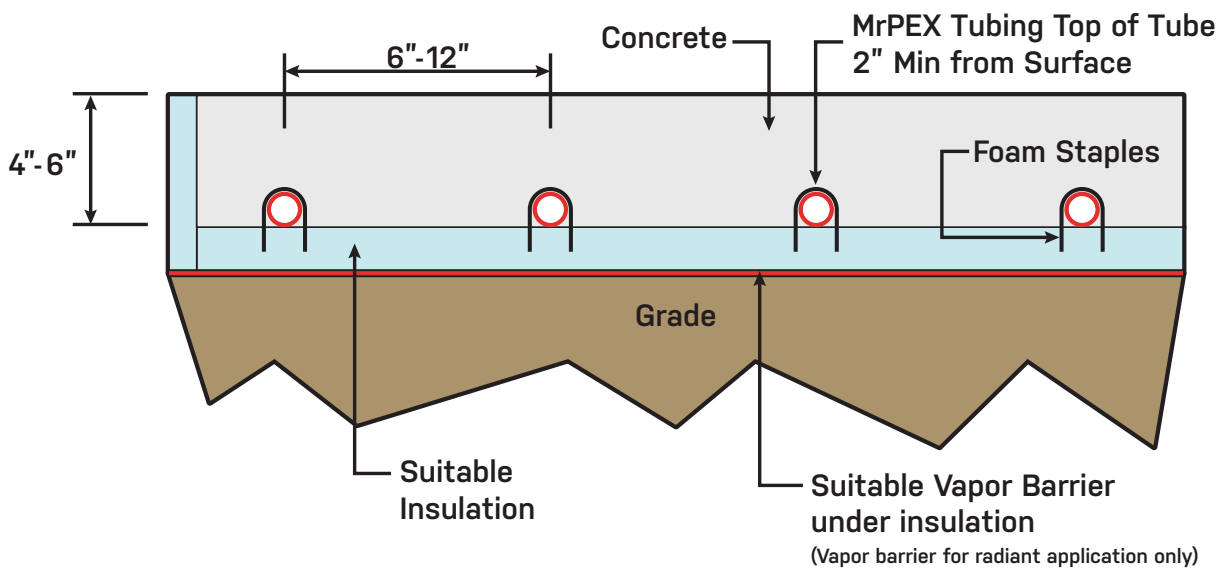
**STRUCTURAL NOTE:** Project Engineer, Project Architect or System Designer need to verify and approve the structural impact of the radiant system on the building prior to installation.

- › Review "Installing Insulation" on page 10–11, to make sure adequate R-value is used. Also, follow local building codes or check with structural engineer for correct compressive strength (PSI) for your application.
- › Lay down suitable foam insulation, covering the complete area. If a vapor barrier is required, make sure a suitable type is put down before the foam insulation. If there are areas that are uneven, you may need to adjust the grade to make sure the foam does not break when walked on. Tape the seams with suitable tape.
- › If you are using foam staples or clips, it is helpful to use a tape measure or story pole to mark the spacing on the insulation at certain intervals to aid the routing of the tubing and to keep the correct spacing. It is especially helpful around the manifold and where closer spacing is needed.
- › If wire mesh or rebar is used, spacing is easier to maintain, but it is still helpful to mark the spacing on the insulation to plan the routing of the loops.
- › Place the uncoiler in an out of the way area, still close enough to easily feed the tubing to the area you are working on. Place the tubing coil on uncoiler and remove tape/straps. To keep uncoiler from tipping over, you can fasten it to a piece of plywood.
- › Pull the loose end of the coil over to the manifold and record the footage mark on tubing. Cut the end of the tubing with a suitable tubing cutter making sure the end is square and clean. If PEX-AL-PEX is used, also ream the end of the tubing using the MrPEX® Reaming tool. Attach a bend support to the tube. Connect to the supply of the first loop on the manifold using the correct fitting assemblies as outlined beginning on page 49, "Connecting the Loops to the Manifold."
- › Start routing the tubing along the supply path (typically along the outside wall) attaching it with foam staples, clips or ties to the wire mesh every 2–3 feet on the straights as necessary and every 1 foot on the bends. It is important to secure the tubing enough so that it does not float up to the surface during the slab pour.  
*NOTE: If chairs are to be used to lift the tubing into the slab, then leave mesh flat while installing tubing, then lift the mesh assembly with the tubing placing it on the chairs.*
- › The top of the tube should be embedded in the slab at a minimum of 2 inches below the surface.
- › Complete the loop following the design. Once back at the manifold record the footage mark on tubing. Attach another bend support to the tube. Cut the end of the tubing with a suitable tubing cutter making sure the end is square and clean. If PEX-AL-PEX is used, also ream the end of the tubing using the MrPEX® Reaming tool. Connect to the return of the first loop on the manifold using the correct fitting assemblies as outlined beginning on page 46, "Connecting the Loops to the Manifold."
- › Mark each tube end as the supply or return and what area it is providing for.
- › Repeat the same process for remaining loops.

## CONCRETE SLAB ON GRADE WITH REBAR WITH INSULATION



## CONCRETE SLAB ON GRADE WITH STAPLES WITH INSULATION



## SLAB ON OR BELOW GRADE WITHOUT UNDERSLAB INSULATION

› Although not recommended for most applications by MrPEX® Systems, this is the prescribed method. Follow local building codes or check with structural engineer for correct compressive strength (PSI) for your application.



› Place the uncoiler in an "out of the way area", still close enough to easily feed the tubing to the area you are working on. Place the tubing coil on uncoiler and remove tape/straps. To keep uncoiler from tipping over, you can fasten it to a piece of plywood.

› Pull the loose end of the coil over to the manifold and record the footage mark on tubing, if using a longer coil than needed. Cut the end of the tubing with a suitable tubing cutter making sure the end is square and clean. If PEX-AL-PEX is used, also ream the end of the tubing using the MrPEX® Reaming tool. Attach a bend support to the tube. Connect to the supply of the first loop on the manifold using the correct fitting assemblies as outlined beginning on page 49, "Connecting the Loops to the Manifold."

*Start routing the tubing along the supply path (typically along the outside wall/edge) attaching it with quip clips or ties to the wire mesh every 2–3 feet on the straights as necessary and every 1 foot on the bends. It is important to secure the tubing enough so that it does not float up to the surface during the slab pour. NOTE: If chairs are to be used to lift the tubing into the slab. To aid installation, leave mesh flat while installing tubing, then lift the mesh assembly with the tubing placing it on the chairs.*

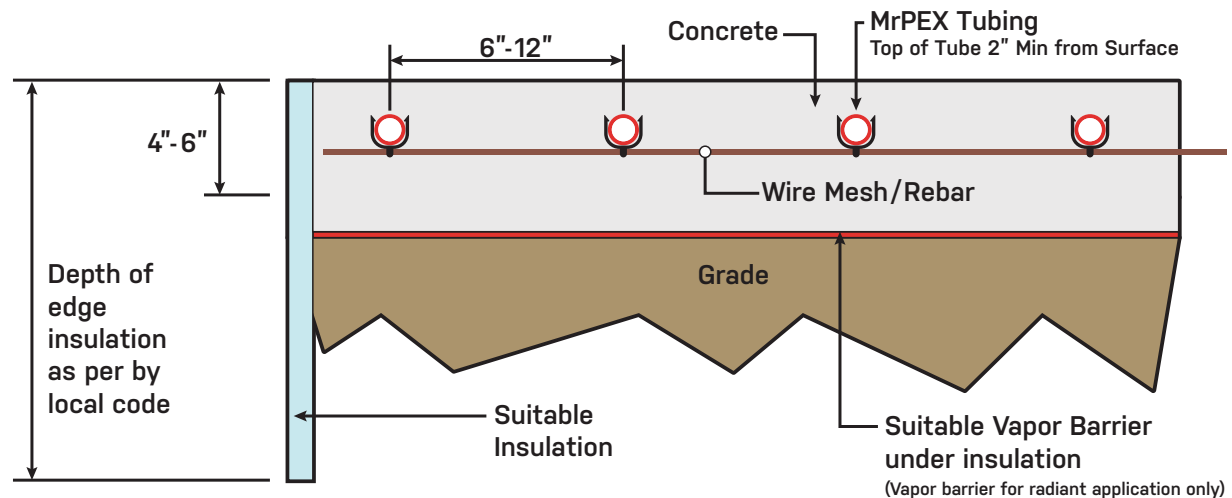
› The top of the tube should be embedded in the slab at a minimum of 2 inches below the surface.

› Complete the loop following the design. Once back at the manifold record the footage mark on tubing. Attach another bend support to the tube. Cut the end of the tubing with a suitable tubing cutter making sure the end is square and clean. If PEX-AL-PEX is used, also ream the end of the tubing using the MrPEX® Reaming tool. Connect to the return of the first loop on the manifold using the correct fitting assemblies as outlined beginning on page 49, "Connecting the Loops to the Manifold."

› Mark each tube end as the supply or return and what area it is providing for

› Repeat the same process for remaining loops.

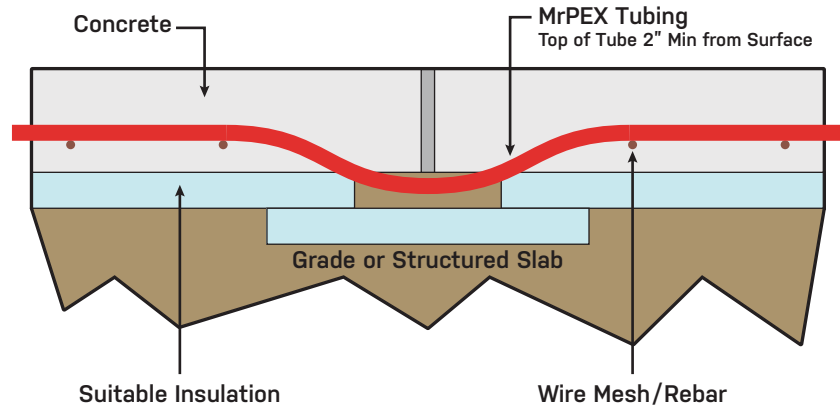
### SLAB ON GRADE USING QUIP CLIPS



# EXPANSION/CONTROL JOINTS

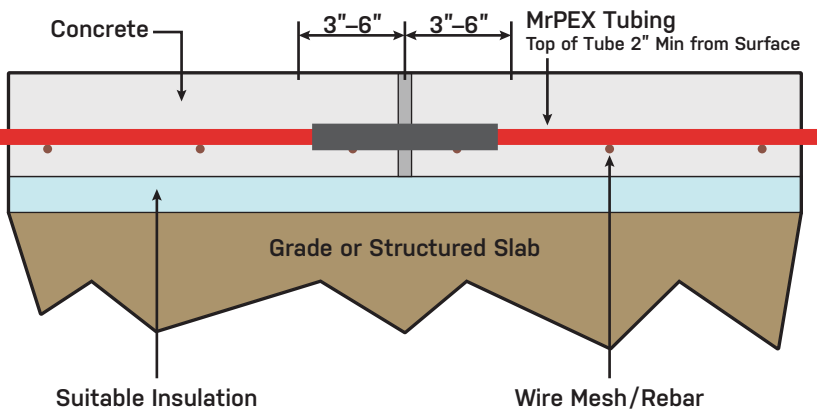
## Note 1, Expansion Joint

Dipping the tubing underneath the expansion joint prior to where the joint is installed greatly aids the installation. This method completely avoids the tubing being subjected to any movement of the slab.



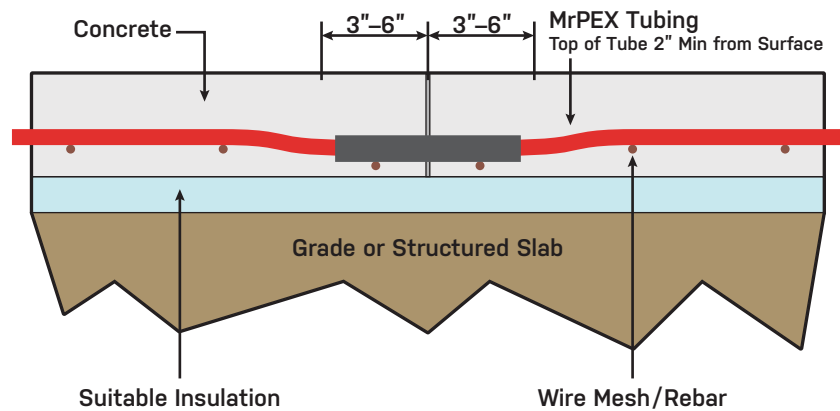
## Note 2, Expansion Joint

For installations where tubing has to penetrate the expansion joint. Sleeve the tubing with 3/8" closed foam pipe insulation such as armoflex. This allows the slab to move at least 3/8" before interfering with the tubing.



## Note 3, Control Joint (Sawcut or formed)

For installations where tubing has to penetrate through or under a control joint. For protection against shifting slab, sleeve the tubing with 3/8" closed foam pipe insulation such as armoflex. This allows the slab to move at least 3/8" before interfering with the tubing. It is however not necessary to do this if there is no risk of the concrete shifting.



## SUSPENDED SLAB OR SLAB ON DECK

*NOTE: Use MrPEX Design Software to establish heat loss for the structure, and to calculate output, surface temperature, water temperature and tubing/manifold pressure drops.*

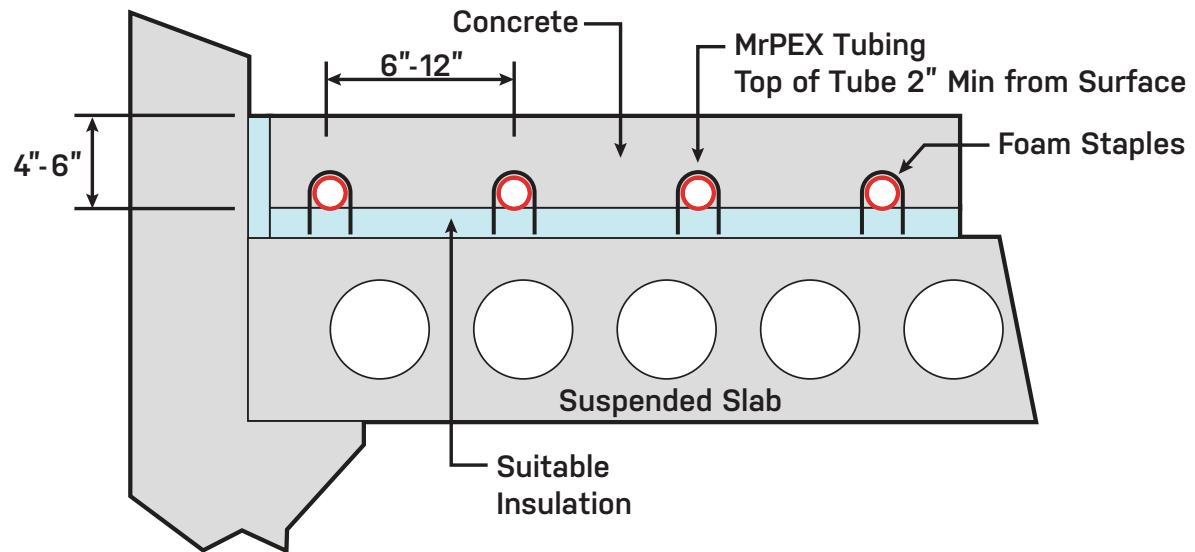
**STRUCTURAL NOTE:** Project Engineer, Project Architect or System Designer need to verify and approve the structural impact of the radiant system on the building prior to installation.



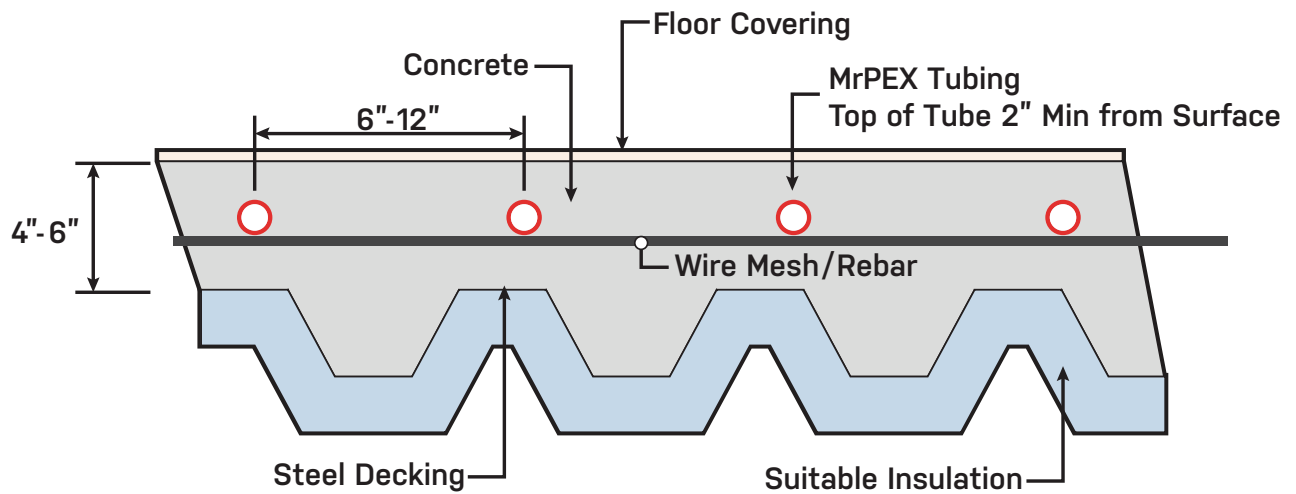
- › Review "Installing Insulation" on page 10–11 to make sure adequate R-value is used. Also, follow local building codes or check with structural engineer for correct compressive strength (PSI) for your application.
- › Lay down suitable foam insulation, covering the complete area. If there are areas that are uneven, you may need to adjust the grade to make sure the foam does not break when walked on. Tape the seams with suitable tape.
- › If you are using foam staples or clips, it is helpful to use a tape measure or story pole to mark the spacing on the insulation at certain intervals to aid the routing of the tubing and to keep the correct spacing. It is especially helpful around the manifold and where closer spacing is needed.
- › If 6 x 6 wire mesh is used, spacing is easier to maintain, but it is still helpful to mark the spacing on the insulation to plan the routing of the loops. *NOTE: It is helpful to leave mesh flat on the surface while tying the tubing layout to it, and then lifting the entire assembly up on chairs. Make sure that the top of the tubing is at least 2" from the surface of the finished slab.*
- › Place the uncoiler in an out of the way area, still close enough to easily feed the tubing to the area you are working on. Place the tubing coil on uncoiler and remove tape/straps. To keep uncoiler from tipping over, you can fasten it to a piece of plywood.
- › Pull the loose end of the coil over to the manifold and record the footage mark on tubing. Cut the end of the tubing with a suitable tubing cutter making sure the end is square and clean. If PEX-AL-PEX is used, also ream the end of the tubing using the MrPEX Reaming tool. Attach a bend support to the tube. Connect to the supply of the first loop on the manifold using the correct fitting assemblies as outlined beginning on page 49, "Connecting the Loops to the Manifold."
- › Start routing the tubing along the supply path (typically along the outside wall) attaching it with foam staples, clips or ties to the wire mesh every 2–3 feet on the straights as necessary and every 1 foot on the bends. *NOTE: If pressure testing is made with air, it is important to secure the tubing enough so that it does not float up to the surface during the slab pour.*  
*NOTE: If chairs are to be used to lift the tubing into the slab. To aid installation, leave mesh flat while installing tubing, then lift the mesh assembly with the tubing placing it on the chairs.*
- › The top of the tube should be embedded in the slab at a minimum of 2 inches below the surface.
- › Complete the loop following the design. Once back at the manifold record the footage mark on tubing. Attach another bend support to the tube. Cut the end of the tubing with a suitable tubing cutter making sure the end is square and clean. If PEX-AL-PEX is used, also ream the end of the tubing using the MrPEX Reaming tool. Connect to the return of the first loop on the manifold using the correct fitting assemblies as outlined beginning on page 49, "Connecting the Loops to the Manifold."
- › Mark each tube end as the supply or return and what area it is providing for
- › Repeat the same process for remaining loops.
- › Organize the loops leading into the manifold before pouring the concrete.



## SUSPENDED SLAB



## SLAB ON DECK

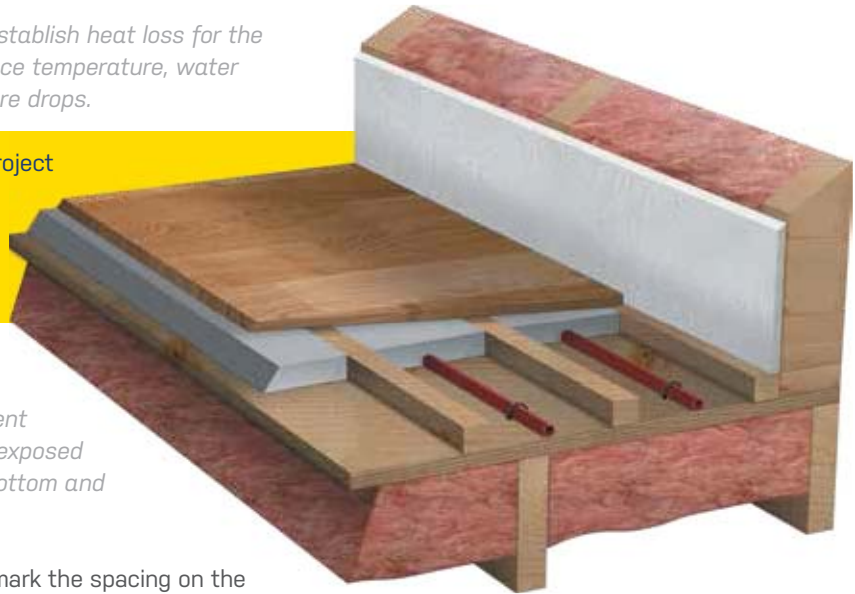


## SUSPENDED FLOORS WITH POURED UNDERLAYMENT

*NOTE: Use MrPEX® Design Software to establish heat loss for the structure, and to calculate output, surface temperature, water temperature and tubing/manifold pressure drops.*

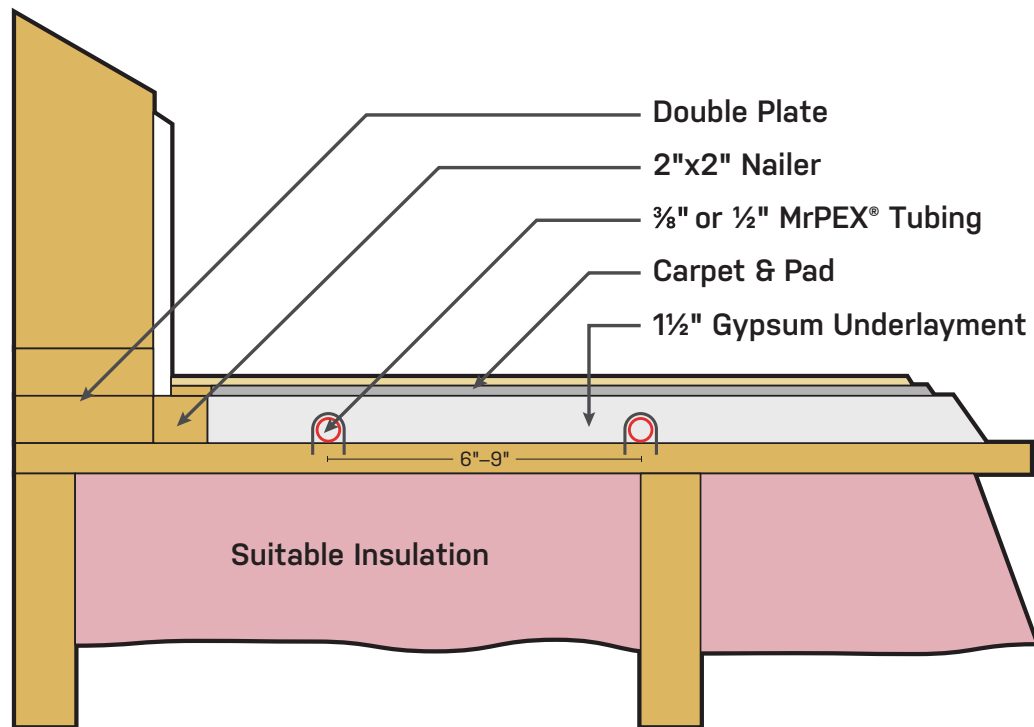
**STRUCTURAL NOTE:** Project Engineer, Project Architect or System Designer need to verify and approve the structural impact of the radiant system on the building prior to installation.

*NOTE: In this method, walls should be framed with double plate on the bottom to accommodate the underlayment thickness. This leaves the second plate exposed to be screwed to the sheetrock at the bottom and accommodates normal door heights.*

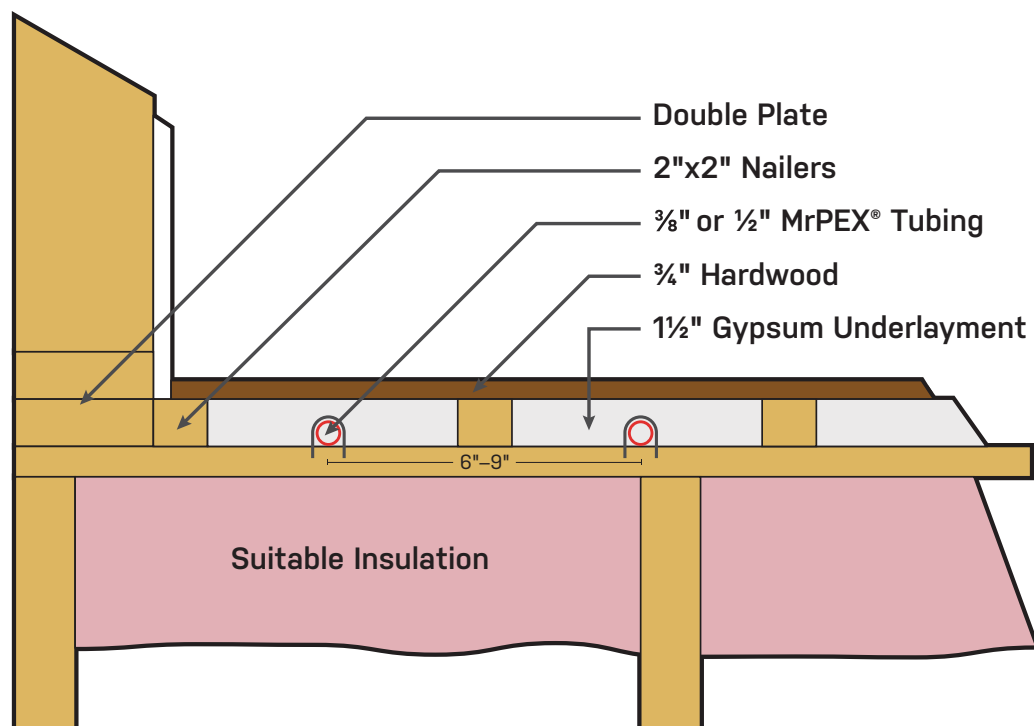


- › Use a tape measure or story pole to mark the spacing on the subfloor at certain intervals to aid the routing of the tubing and to keep the correct spacing. It is especially helpful around the manifold and where closer spacing is needed.
- › Place the uncoiler in an out of the way area, still close enough to easily feed the tubing to the area you are working on. Place the tubing coil on uncoiler and remove tape/straps. To keep uncoiler from tipping over, you can fasten it to a piece of plywood.
- › Pull the loose end of the coil over to the manifold and record the footage mark on tubing. Cut the end of the tubing with a suitable tubing cutter making sure the end is square and clean. If PEX-AL-PEX is used, also ream the end of the tubing using the Mr PEX® Reaming tool. Attach a bend support to the tube. Connect to the supply of the first loop on the manifold using the correct fitting assemblies as outlined in "Connecting the Loops to the Manifold" beginning on page 49.
- › Start routing the tubing along the supply path (typically along the outside wall) attaching it with a suitable staple gun every 2–3 feet or so on the straights as necessary and every 1 foot on the bends. It is important to secure the tubing enough so that it does not float up to the surface during the underlayment pour.
- › Tube embedded in gypsum or lightweight concrete should have a minimum of 3/4" underlayment material over the highest point of the tube
- › Complete the loop following the design. Once back at the manifold record the footage mark on tubing. Attach another bend support to the tube. Cut the end of the tubing with a suitable tubing cutter making sure the end is square and clean. If PEX-AL-PEX is used, also ream the end of the tubing using the Mr PEX® Reaming tool. Connect to the return of the first loop on the manifold using the correct fitting assemblies as outlined in "Connecting the Loops to the Manifold" beginning on page 49.
- › Mark each tube end as the supply or return and what area it is providing for.
- › Repeat the same process for remaining loops.

### WITH CARPET & PAD



### WITH HARDWOOD FLOORING



## SUSPENDED FLOORS WITH ALUMINUM HEAT EMISSION PLATES ON TOP OF THE SUBFLOOR

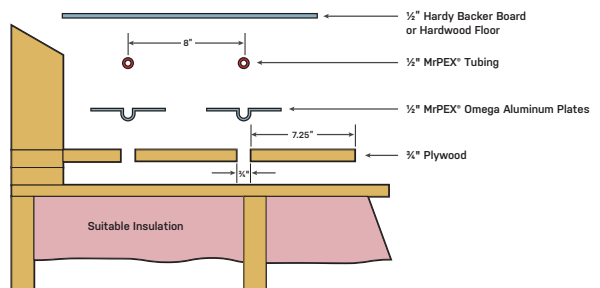
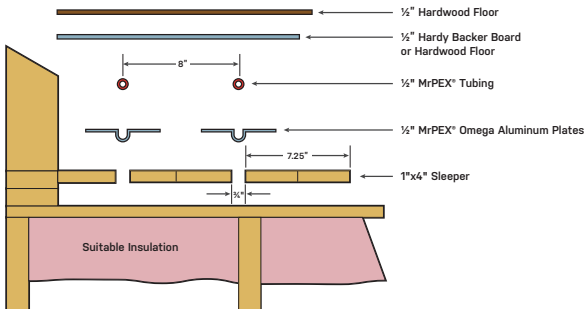
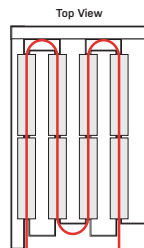
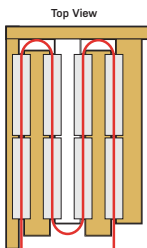
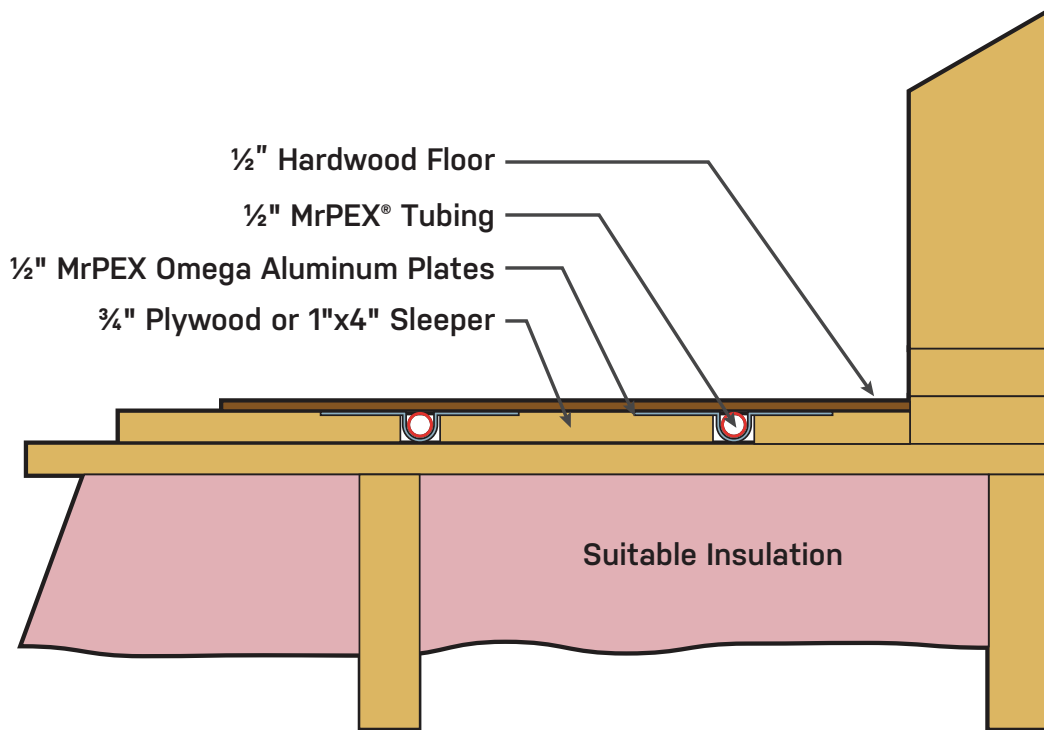
*NOTE: Use MrPEX® Design Software to establish heat loss for the structure, and to calculate output, surface temperature, water temperature and tubing/manifold pressure drops.*

**STRUCTURAL NOTE:** Project Engineer, Project Architect or System Designer need to verify and approve the structural impact of the radiant system on the building prior to installation.



- › Make sure subfloor is clean and free of nails/screws etc..
- › For this application use either 1 x 4 sleepers, ripped plywood, or MrPEX® WoodTrac Panels.
- › Frame-in two walls of the area to be covered with wood sleepers. Make sure to keep as close to a 90 degree angle as possible. Glue and screw the sleepers to the sub-floor.
- › Following the first sleeper, leave a 1" gap and then continue to fasten two 1 x 4 sleepers next to each other to the subfloor covering the rest of the area, or one piece of ripped plywood. Stagger the sleepers at the end at least 8"-12" at the end of each run to leave ample room for tube turn. Accommodate for the return tube run back to the manifold.
- › Place omega plates in the 1" grooves. Leave ¼" - ½" space between plates. Using a pneumatic stapler, staple only one side of the omega plate to the sleeper.
- › Start laying the tube snapping it into the omega plates as you go along. Connect the tubing to the manifold and repeat process for next loop.
- › Once tubing is installed, perform a pressure test of 40 – 60 psi for 24 hrs to ensure that the tubing has not been damaged during installation.
- › Install adequate underlayment for planned floor covering. For carpeting and tile it is recommended to use ¼" hardy backer board or similar. Pay close attention to where the tubes are located before gluing and screwing down the backer board. For hard wood floor, follow wood floor manufacturers recommendations. Leave system under pressure on to notice any damage during installation.

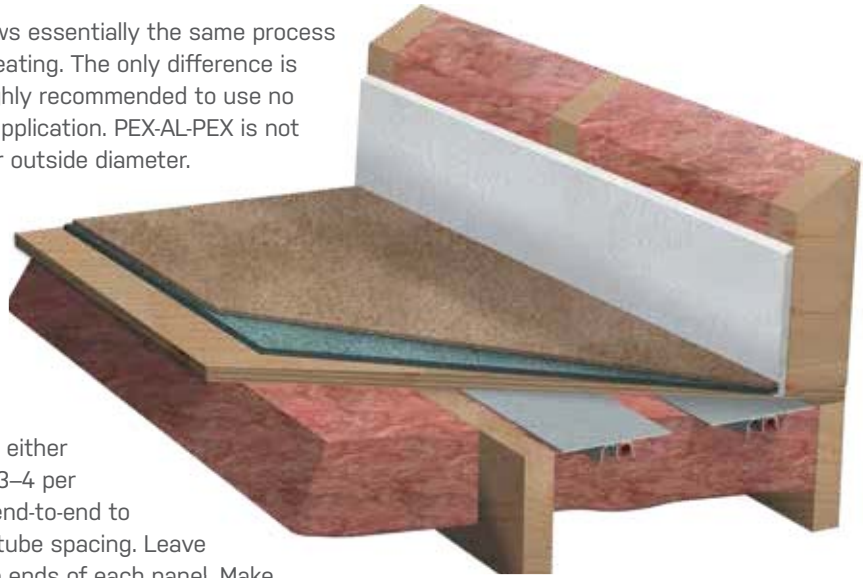
**WITH HARDWOOD OR HARDY BACKER BOARD FLOORING**



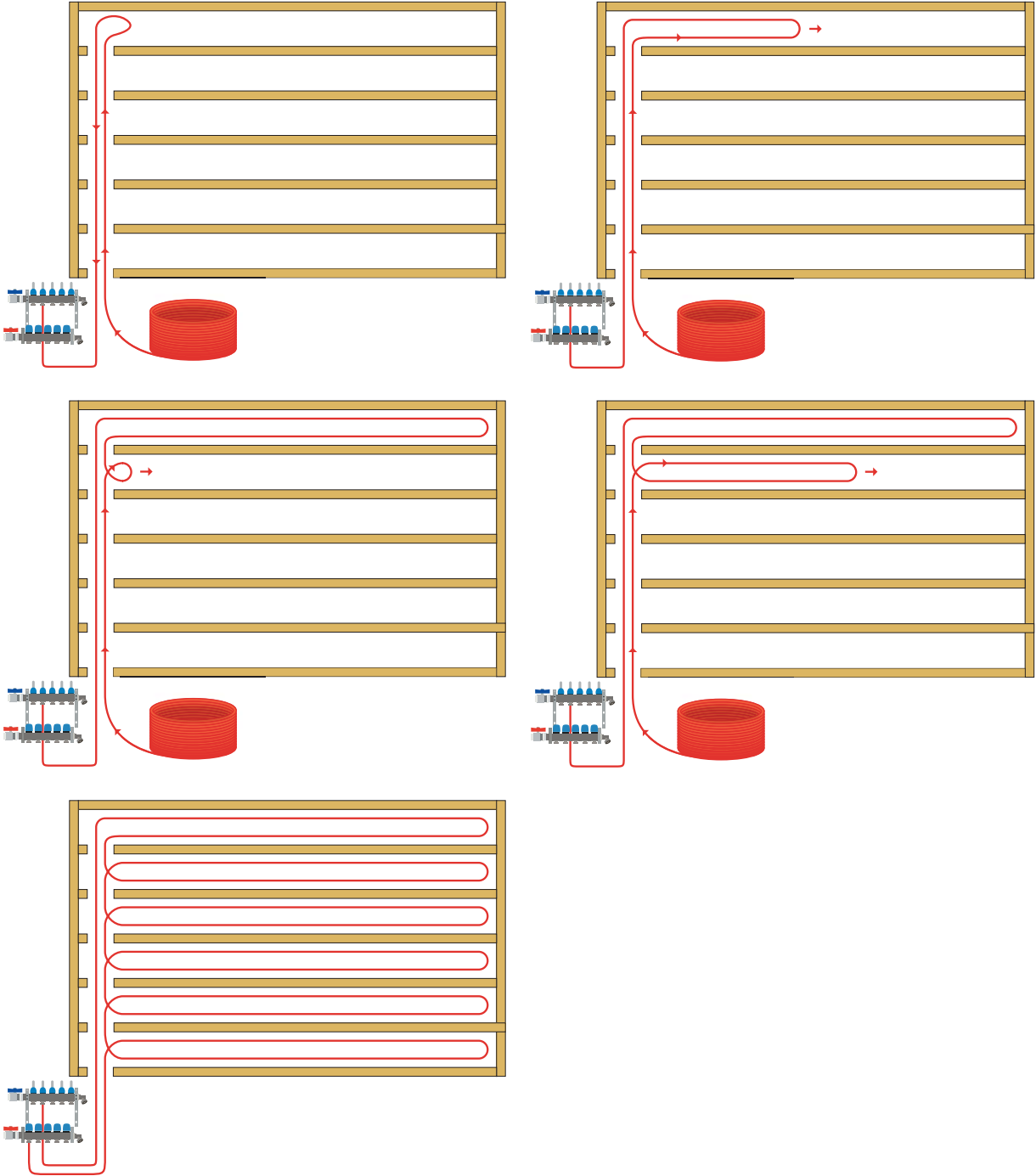
## SUSPENDED FLOORS WITH ALUMINUM HEAT EMISSION PLATES BETWEEN JOISTS BELOW

Tubing installed in the joist cavity follows essentially the same process for Duo-Track, Omega Plates or Joist Heating. The only difference is the way the tubing is attached. It is highly recommended to use no larger than 1/2" MrPEX® tubing for this application. PEX-AL-PEX is not used in this application due to its larger outside diameter.

- › Review design to determine how tubing should be routed in the joist cavity. Drill suitable holes through the joist (follow local codes to maintain structural integrity).
- › For Duo-Track installation only, using either screws or other suitable fasteners (3–4 per side), start by attaching the plates end-to-end to the bottom of the subfloor at an 8" tube spacing. Leave about a 1/4"–1/2" space between the ends of each panel. Make sure tubing groove is free from sharp edges and burrs. Use a dowel or piece of pipe in the groove to line up the plates.
- › Place the uncoiler in an out of the way area, still close enough to easily feed the tubing to the area you are working on. Place the tubing coil on uncoiler and remove tape/straps.
- › Pull the loose end of the coil and feed the tubing through the holes in the joists from the area closest to the manifold to the joist cavity for the loop farthest away. Make a large loop with tubing and start threading the loose end back through the same holes over to the manifold leaving the large loop of tubing at the far joist cavity. You have to continually feed the tubing from the uncoiler as you thread the tubing back. Record the footage mark on tubing. Attach a bend support to the tubing as necessary. Cut the end of the tubing with a suitable tubing cutter making sure the end is square and clean. Connect to the supply of the first loop on the manifold using the correct fitting assemblies as outlined in "Connecting the Loops to the Manifold" beginning on page 46.
- › At the farthest joist cavity, start expanding the large loop by pulling on the end that is fed from the uncoiler, at the same time, carefully twist it 180 degrees to make a pig-tail. Extend the loop end all the way to end of the joist cavity. Temporarily attach the loop end to hold it in place.
  - » For Joist Heating, starting from the loop end, hang the tubing in the joist cavity using suitable clips or hangers. Leave about a 1–2" air gap between the tubing and the bottom of the subfloor. Work your way all way down to the beginning of the joist cavity. Arrange tubing, making sure everything looks professional and neat. Complete next loop cavity following steps above.
- › Once back at the manifold, record the footage mark on tubing. Attach another bend support to the tube as necessary. Cut the end of the tubing with a suitable tubing cutter making sure the end is square and clean. Connect to the return of the first loop on the manifold using the correct fitting assemblies as outlined in "Connecting the Loops to the Manifold" beginning on page 49.
- › Mark each tube end as the supply or return and what area it is providing for.
- › Repeat the same process remaining loops.



# INSTALLING MrPEX® TUBING IN JOIST CAVITY

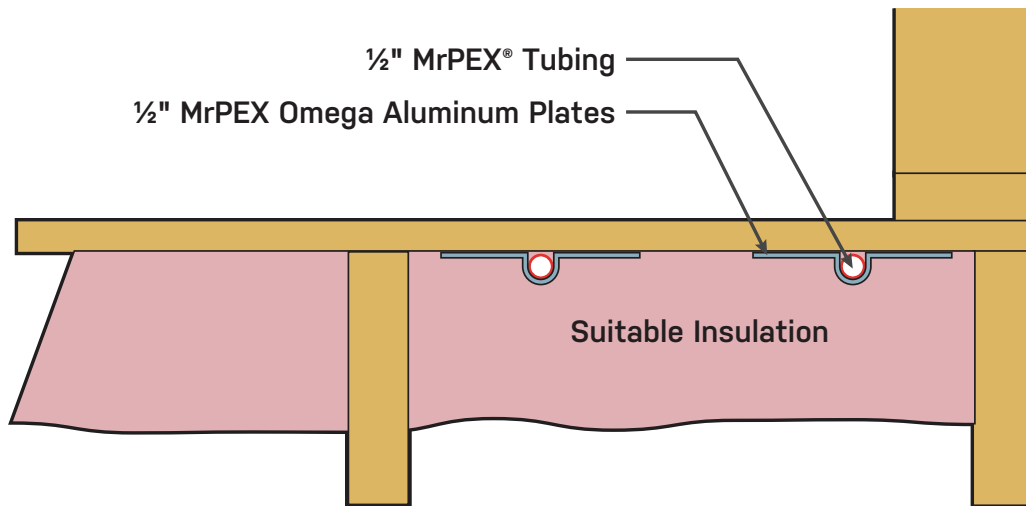


## BELOW FLOORING (cont.)

*NOTE: Use MrPEX® Design Software to establish heat loss for the structure, and to calculate output, surface temperature, water temperature and tubing/manifold pressure drops.*

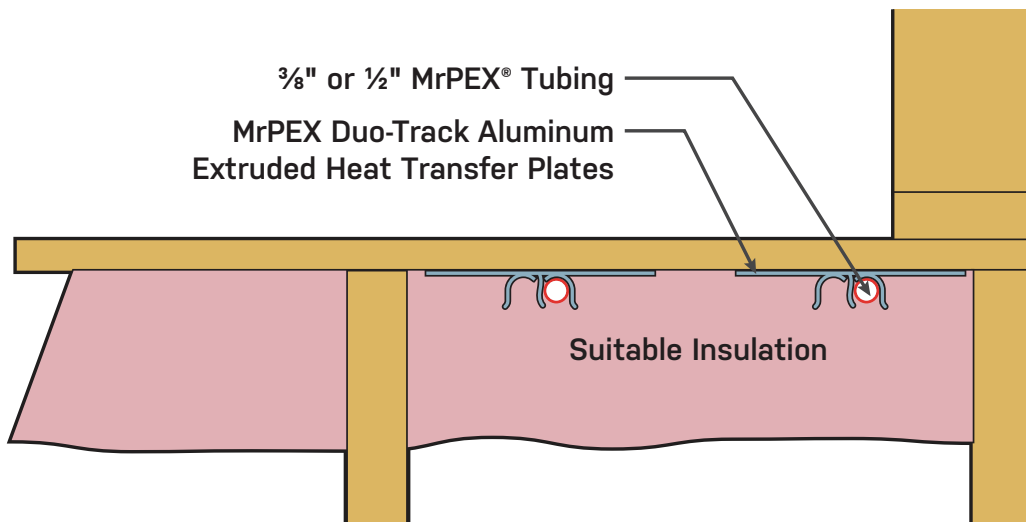
**STRUCTURAL NOTE:** Project Engineer, Project Architect or System Designer need to verify and approve the structural impact of the radiant system on the building prior to installation.

- › For Omega Plates, starting from the loop end, put the first Omega plate up against the subfloor at the same time snapping the tubing into the groove. Attach the plate to the subfloor using suitable fasteners such as 5/8" staples (2–3 per side). Leave about a 1/4"–1/2" space between the ends of the panels. Work your way all way down to the beginning of the joist cavity. Arrange tubing, making sure everything looks professional and neat. Make sure tubing groove is free from sharp edges and burrs. Complete next loop cavity following steps above.



### DUO-TRACK

- › For Duo-Track (installed before running tubing), start from the loop end and snap tubing into the grooves using a rubber mallet or palm-nailer. Work your way all way down to the beginning of the joist cavity. Arrange tubing, making sure everything looks professional and neat. Complete next loop cavity following steps above.

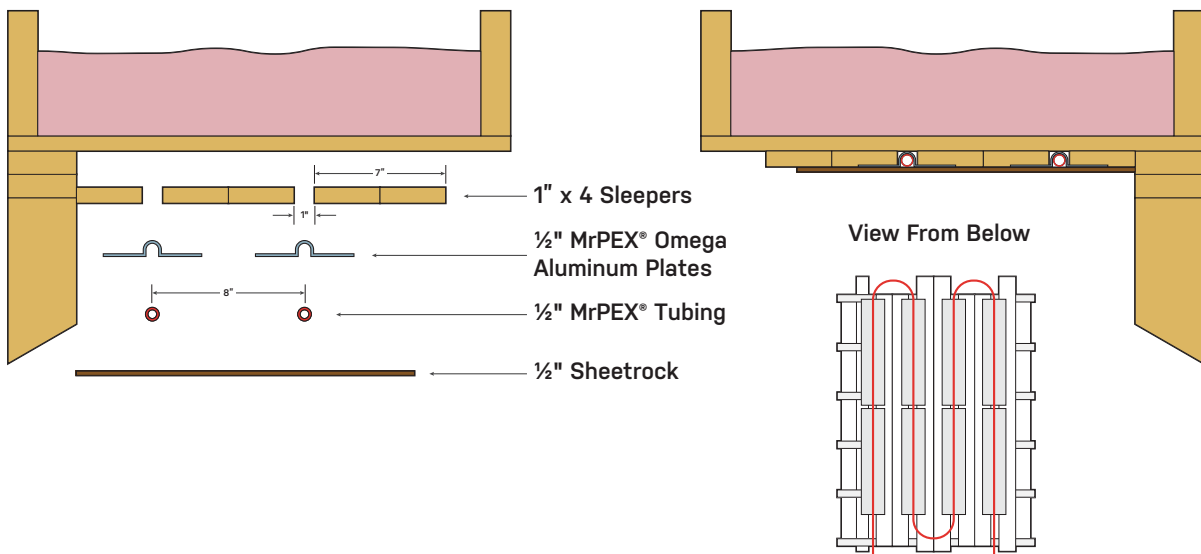




# RADIANT CEILING WITH ALUMINUM HEAT EMISSION PLATE

*NOTE: Use MrPEX® Design Software to establish heat loss for the structure, and to calculate*

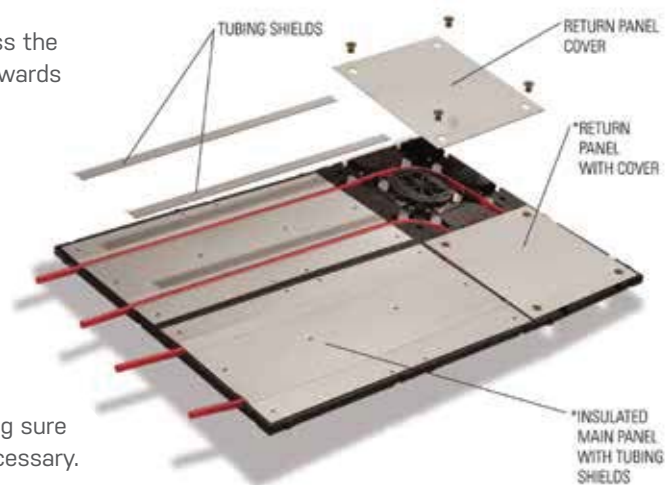
- › Make sure the bottom of the ceiling joists are clean and free of nails/screws etc..
- › For fastest installation, use 1 x 4's as sleepers.
- › Start by the outside wall and attach one run of the 1 x 4 sleeper perpendicular (90 degrees) to the ceiling joists.
- › Following the first sleeper, leave a 1" gap and then continue to fasten two 1 x 4 sleepers next to each other to the ceiling joists covering the rest of the area. Stagger the sleepers at the end at least 8"-12" at the end of each run to leave ample room for tube turn. Accommodate for the return tube run back to the manifold.
- › Place omega plates in the 1" grooves. Leave ¼" - ½" space between plates. Using a pneumatic stapler, staple only one side of the omega plate to the sleeper.
- › Start laying the tube snapping it into the omega plates as you go along. Connect the tubing to the manifold and repeat process for next loop.
- › Once tubing is installed, perform a pressure test of 40 – 60 psi for 24 hrs to ensure that the tubing has not been damaged during installation.
- › Install sheetrock making sure not to damage the tubing. Leave system under pressure on to notice any damage during installation.



## RETROPANEL ON EXISTING CONCRETE

*NOTE: Use MrPEX® Design Software to establish heat loss for the structure, and to calculate output, surface temperature, water temperature and tubing/manifold pressure drops.*

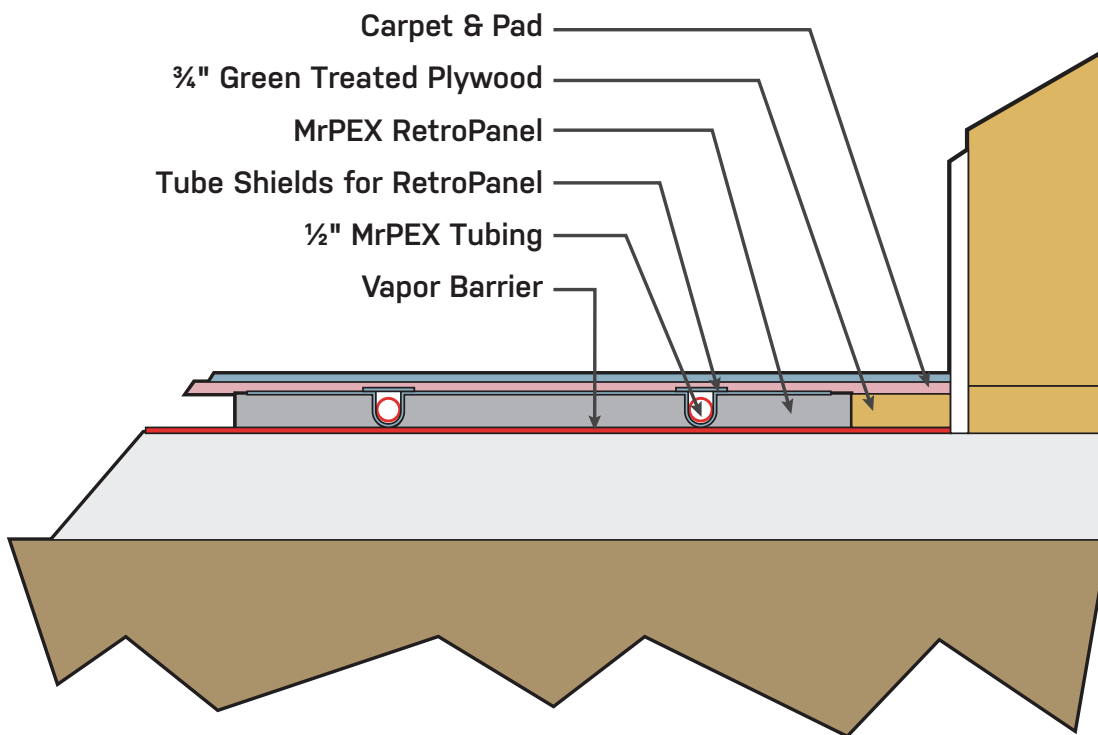
- › Review layout and start by identifying the manifold location. If the manifold is located behind a stud wall, cut out the bottom plate and about 1.5" of the sheet rock at the bottom.
- › Make sure concrete floor is level, clean, and knock down or grind off any bumps or high spots that may interfere with the panels. If necessary, do a skim coat of self leveling concrete as per manufacturers instructions.
- › Cover complete area where the panels will be with a 2 mil vapor barrier. It is helpful to hold the vapor barrier in place with tape.
- › Start in a far corner by laying the RetroPanels across the width of the room row by row building the layout towards the manifold.
- › Once the layout is complete for that room, slide the RetroPanel floor assembly so that it has at least 3" around the perimeter of the whole assembly. Typically one or two sides will be bigger than the other two. If there is an uneven spot where there's too much movement. Use tapcon masonry screws as necessary to tighten down the panels.
- › Complete the remaining rooms the same way making sure to follow the design layout. Make adjustments if necessary.
- › To start the tube installation, run the end of the PEX coil under the sheetrock wall and up about 3'-4' up the wall at the manifold location. Keep tubes organized and labeled.
- › Follow the design walking the tubing into the groove of the RetroPanel. Use work boots or other hard-sole shoes to push the tubing to make it seat fully in the groove.



*NOTE: Do not use a rubber mallet as it may dent or deform the metal.*

- › Once back at the manifold, estimate the tubing needed to complete the run, cut it and run it under the wall and tie it together with the supply for that loop.
- › Mark each tube end as the supply or return and what area it is providing for.
- › Complete all the loops in the same fashion.
- › Once all the loops are installed, mount the manifold and connect the tubes, perform a pressure test of 40–60 psi for 24 hrs to ensure that the tubing has not been damaged during installation. Leave the pressure on until all construction is completed.

- › Use 3/4" green treated plywood to fill in the areas not covered by the RetroPanels. Plan a 1/4" gap between the panels and the plywood to accommodate any movement. When securing the plywood to the concrete, use tapcon masonry screws or ramsets to adequately secure the plywood.
- › For the area around the manifold, organize the tubes and make sure they lay flat. Use conduit clamps screwed to the concrete if necessary. Then fill in the area with self-leveling patching concrete to the level of the panels and let fully harden over night. Touch up if necessary.
- › Attach covers for the turn-around panels using supplied plastic clips. Place tube shields over the exposed tubing in the straight panels. Use packing tape to secure the tube shields. Make sure the panels are clean prior to taping to ensure adequate adhesion.
- › For carpeting, make sure the carpet installer is aware of where the tubes are when installing the tack-strips. In areas close to the tubing, use construction glue and let harden over night. Install carpet and pad as usual.
- › For tile, it is only recommended to use in smaller areas such as bathrooms or in front of sliding doors etc. Use 1/4" cement backer board or similar. Pay close attention to where the tubes are located before gluing and screwing down the backer board. Follow tile installer recommendations.
- › Only floating wood floors are recommended. Follow wood floor manufacturers recommendations.



## INSTALLING THE SLAB SENSOR

When Using MrPEX® air and floor sensing thermostats (part # 5110519 and 5110521), and you want to use the floor (slab) sensor, follow the recommended steps.

- › Determine the thermostat location.
- › Use 1/2" or 5/8" Pex tubing, start with capping one end of the tube, place capped end directly between MrPEX® tubing runs, preferably a foot or two from the wall. Fasten capped end to subfloor with staple or straps from capped end to the wall.
- › Install a bend support onto the tube to direct the up the wall cavity..
- › Fasten and terminate the tube at thermostat location.
- › Insert the slab sensor into the tube as far as it will go in.
- › Connect the sensor to S1 and Com on the thermostat.

