KARANA FLOORSTM INSTALLATION METHODS

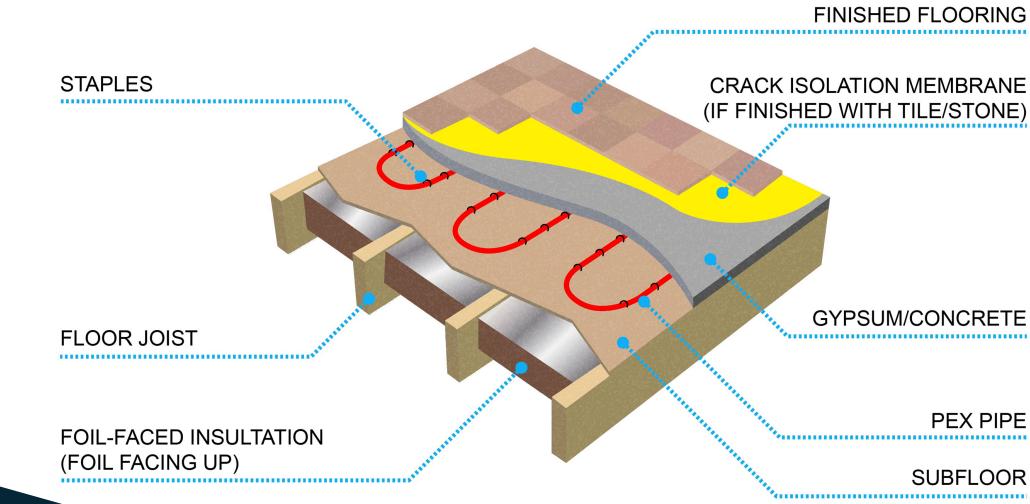
Warm Corp West has several installation options for our principle product, Warm Floors[™]. The installation method for your system will be determined by your project's parameters.

Here you will find a detailed explanation of each installation method, including:

Staple-Down to Wood	Pg.2
Staple-Down to Concrete	Pg.3
Hilti-Down	
Tie-Down	Pg.5
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Staple-Up	Pg.7



STAPLE-DOWN TO WOOD



ABOUT **STAPLE-DOWN** TO WOOD INSTALLATION

-PEX Pipe is stapled down to the wooden subfloor.

-The secured pipe is then covered with concrete, Levelrock[®] gypsum,

or mortar and membrane.

-This method is relatively inexpensive, the quickest to install, and

provides the most responsive performance.

STAPLE-DOWN TO CONCRETE

PFX PIPF

RIGID FOAM

VAPOR MEMBRANE

(IF REQUIRED)

ABOUT **STAPLE-DOWN** TO CONCRETE INSTALLATION

EXISTING CONCRETE SL

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-A layer of rigid foam insulation is installed atop the existing concrete slab.

-PEX Pipe is fastened to this foam using plastic staples.

-The secured pipe is then covered with concrete or Levelrock[®] gypsum.

-The use of rigid foam over existing concrete is preferred because it increases response

time and energy efficiency of the radiant system by preventing heat energy from radiating into the underlayment. -We recommend installing a vapor membrane over the existing slab if required to reduce the possibility of moisture-induced foundational cracks. Check with your contractor to find out whether this is necessary for your project.











HILTI-DOWN

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NEW GYPSUM/CONCRETE

HILTI NAILS AND CONDUIT CLIPS

ABOUT HILTI-DOWN INSTALLATION

EXISTING CONCRETE SL

-PEX Pipe is fastened to existing concrete slabs using powder-activated nails (aka Hilti Nails) and half round conduit clips.

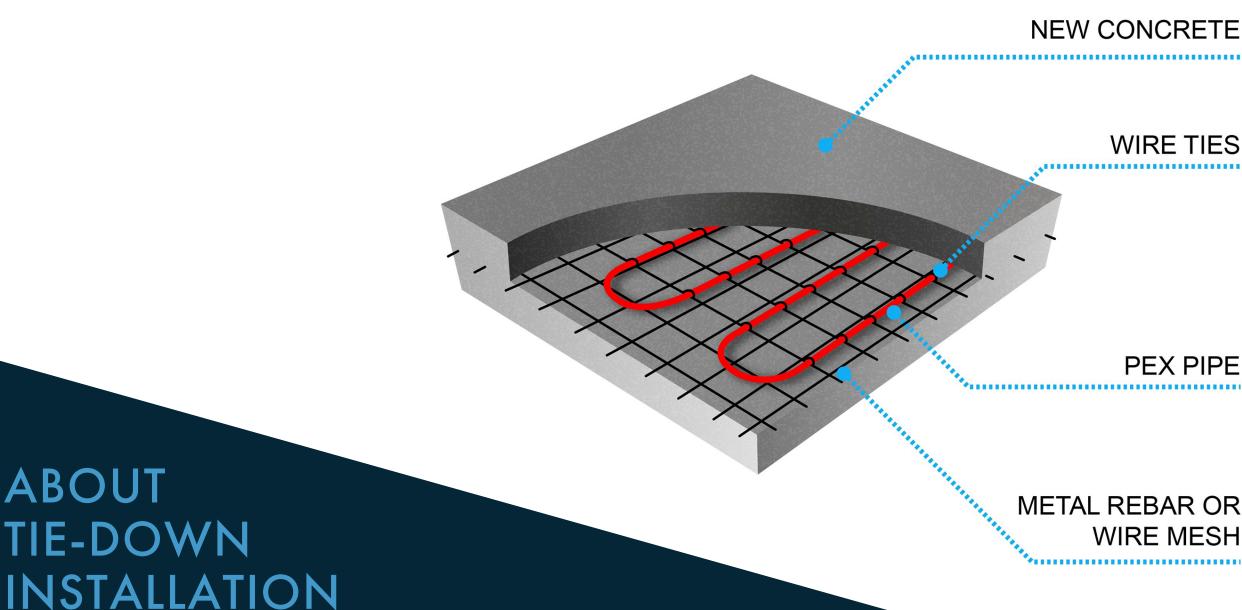
-The secured pipe is then covered with concrete, Levelrock[®] gypsum, or mortar and membrane. -This method is used in projects where there is an existing concrete slab and surface insulation is not required. -As in Staple-Down to Concrete, we recommend installing a vapor membrane over the existing slab if required to reduce the possibility of moisture-induced foundational cracks. Check with your contractor to see if this is necessary for your project.







TIE-DOWN



-PEX Pipe is tied down to metal rebar or 6" x 6" mesh inside of a new concrete slab. -The Tie-Down method is used when there is a new concrete slab.

ABOUT

TIE-DOWN

-While inexpensive, this method offers a relatively (when compared to Staple-Down methods) slower response time because the heat must warm the concrete slab before radiating into the building. -As in the Hilti-Down method, we recommend an additional layer of rigid foam installed beneath the new slab to prevent heat energy radiating downward. This optional insulation increases the efficiency of your radiant system.









HEATPLY

ABOUT HEATPLY INSTALLATION

-HeatPly is 5/8" thick plywood with precut grooves that is screwed and glued to subfloor.

-PEX Pipe is then pressed into the precut grooves.

-HeatPly is directly covered with finished wood flooring. Finished

tile or carpet require an additional substrate.

-This method is used only when floor height is limited.

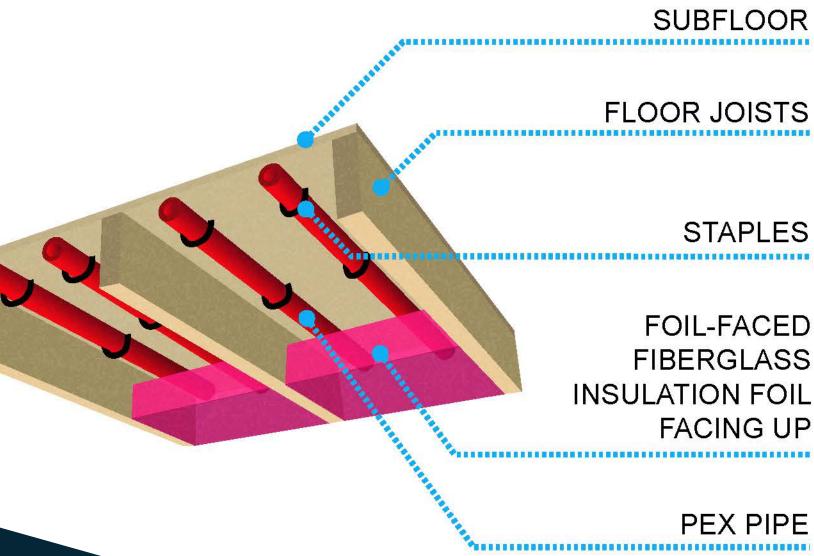








STAPLE-UP



ABOUT STAPLE-UP INSTALLATION

-PEX Pipe is stapled up underfloor to the subfloor or joists. The secured pipe is then covered with foil-faced fiberglass insulation. Maintain an minimum air gap of 1" between the PEX pipe and the foil-faced insulation. -This method, relative to its alternatives, is slow to install, slow to respond, and labor intensive. Therefore, Staple-Up is best used when there is already a finished floor in place and there is no other option.



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