

AquaHeat Installation Guide

Hydronic Flooring Wet

A systems approach integrating established and emerging technologies

System Design and Installation

The Mains

PEX pipe mains are recommended to reduce labor and architectural impact. For a slab-on-grade installation, the mains can be buried below or within the slab. For below slab installation refer to insulated supply and returns like ComfortPro Systems Microflex product range. For a wet or dry on plywood application, the mains can be installed within the joist cavity. Always allow for the expansion and contraction of the mains, as the temperature fluctuates. It is recommended that the pipe be allowed free movement and is not fastened directly to the floor joists.

Requirements of a hydronic control system

The intent of a hydronic heating control system is to achieve heating comfort, system protection, energy saving and ease of use.

Heating comfort is achieved by:

- keeping proper system temperatures
- directing the right amount of heat when and where you want it

System protection is achieved by:

- protecting the primary heat source (e.g. boiler) from corrosion and thermal shock
- reducing equipment cycling

Energy saving is achieved by:

- running the system at the lowest water temperature possible
- turning off the system when no heat is demanded
- minimizing boiler short cycling.

Ease of use is achieved by:

- running automatic functions in lieu of manual settings
- providing easy and consistent wiring and installation procedures

AquaHeat Installation Guide Philosophy

A hydronic system can get quite complicated and with the rapid introduction higher integrated solutions keeping up is challenging more than ever. To keep the basic installation order we have build this series of guides to reflect the typical steps in the implementation of a project.

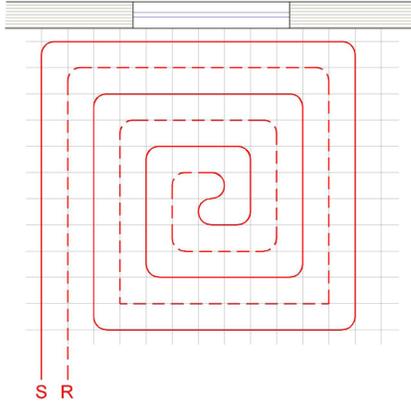
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Wet Installation: Pipe Laying Technique

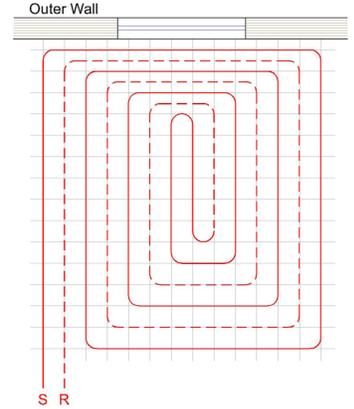
Counter Floor Loop

Perimeter border zone (tighter spacing), and inner zone (wider spacing).



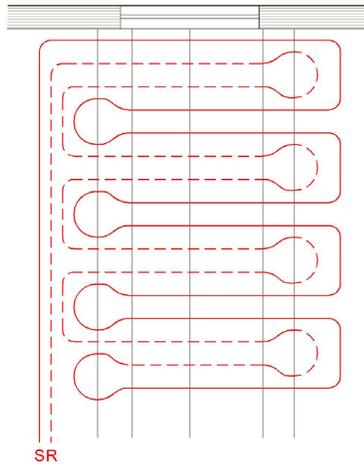
Border Counter Floor Loop

Perimeter border zone (tighter spacing), and inner zone (wider spacing).



Double Counter Floor Loop

This is the recommended installation method for tracking.

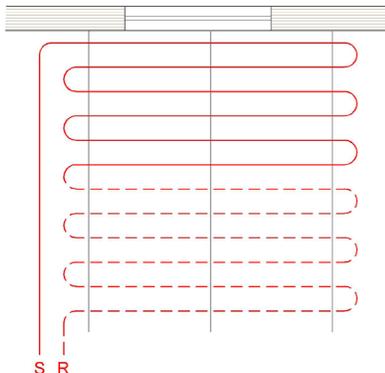


Note:

- Allow for sloppy or large radius turns where piping makes a single spacing pass, especially for any spacing less than 6" (150 mm) (see examples).
- For pipe spacing of 4" (100 mm) or less, an additional track at the loop end is recommended to ensure even spacing.

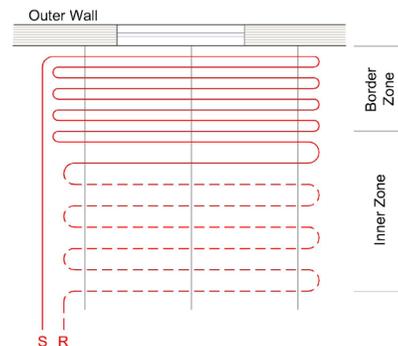
Serpentine Loop

Only recommended for floor surface areas where the temperature drop from supply to return piping transition is not critical (i.e. low occupancy areas).



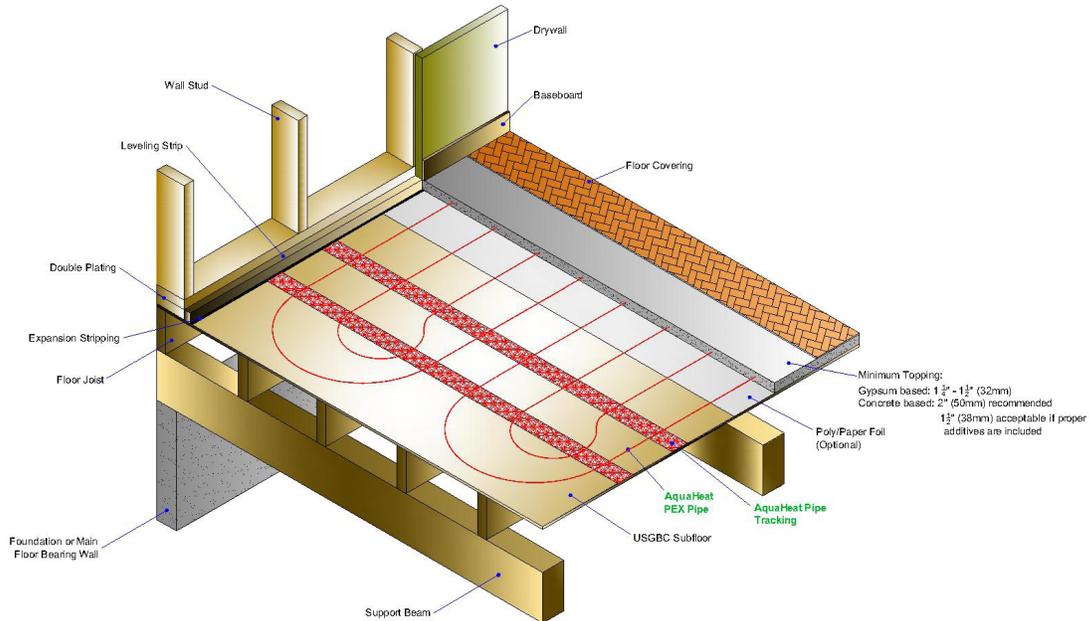
Border Serpentine Loop

Perimeter border zone requires tighter spacing, and the inner zone requires wider spacing. This is recommended for areas of high heat loss on perimeter, and where a floor surface temperature drop in the inner zone is not critical (i.e. carpeted areas or low occupancy areas).



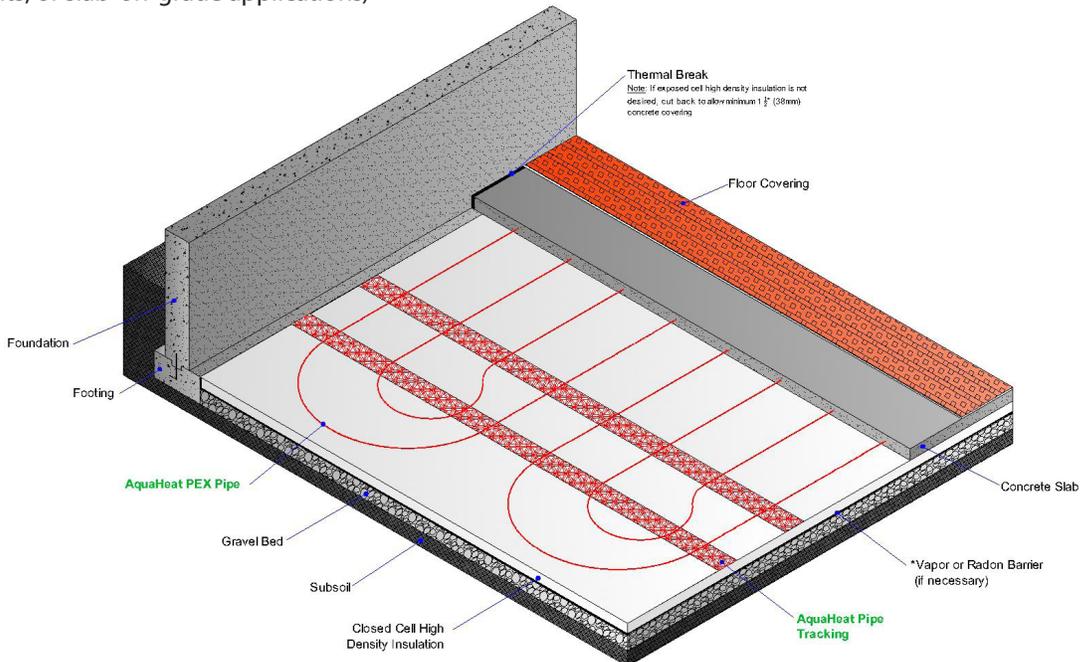
Wet Installation: Pipe Laying Technique

AquaHeat Wet Installation on Top of Subfloor (i.e. upper stories)



* Insulation is recommended where the space below should not receive any heat. (e.g. wine cellars).

Wet Installation for Ground Floor
(i.e. basements, or slab-on-grade applications)

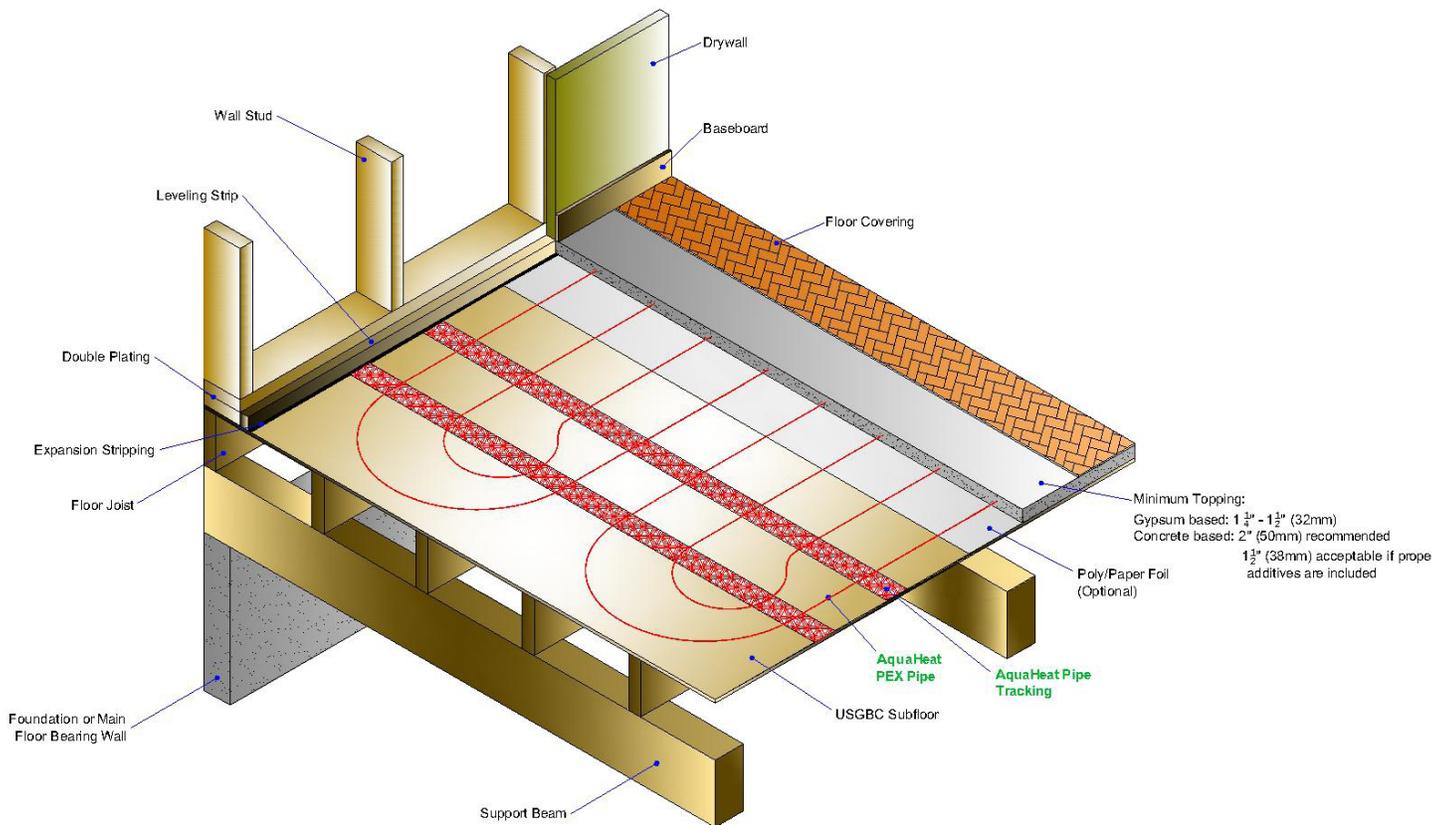


Note: If piping is to be placed directly on the gravel bed without a layer of closed cell high density insulation, wire mesh or rebar and plastic tie straps should be used instead of pipe tracking and track staples.

* For applications where a high water table or soil moisture content is present, an insulation layer plus vapor barrier must be provided!

Wet Installation: Pipe Laying Technique

Wet Installation on Top of Subfloor with Sleepers for Solid Hardwood Flooring (i.e. upper floors)



Note: Sleepers should be added after laying the pipe to maintain the pipe spacing.

* Insulation is recommended where the space below should not receive any heat. (e.g. wine cellars).

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