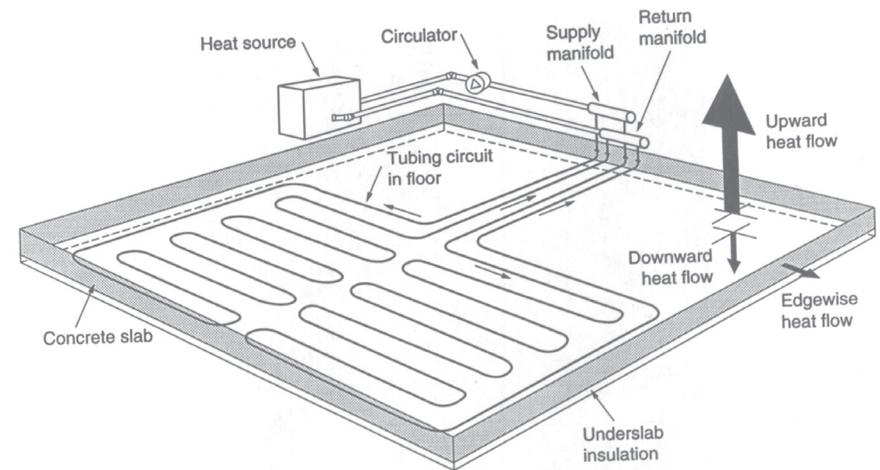


# UNDERFLOOR CIRCUITS



## INSTALLATION GUIDE

## 1. Site preparation

A properly prepared site is essential for optimum radiant system performance. Radiant systems that are installed on sites that are not well drained, sit on bedrock or clay subsoil can conduct considerable heat away from the system. To prevent tube damage, the compacted subsoil should be smooth and flat. The reinforcing mesh should be securely fastened to prevent the mesh from moving and damaging the pipe.

## 2. Insulation

It is recommended that a layer of 50mm insulation be placed below the slab and standing vertically around the perimeter of the slab to within 50mm of the finished slab height to prevent sideways heat loss.

## 3. Tube fixing

It is good practise to mark all walls, partitions, doorways, bench units and expansion joints on the insulation as a guide for tube spacing and fixing.

PeX pipe needs to be secured using 'Smartclip' or cable ties every 300mm and on the apex of every turn.

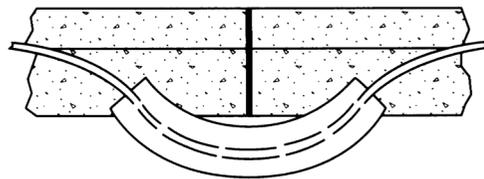
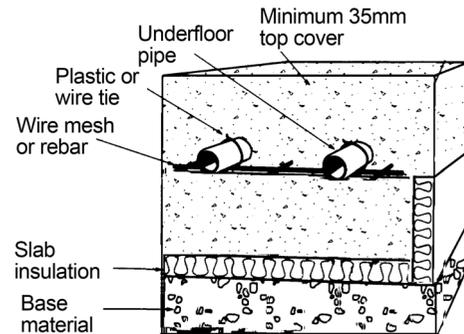
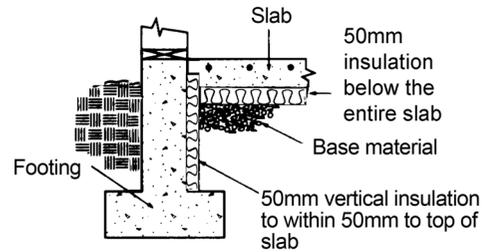
PeX/Al/PeX multilayer pipe needs to be secured using cable ties every 600mm and on the apex of every turn.

## 4. Expansion joints

Special care needs to be taken around expansion joints. Tubes passing below an expansion joint should preserve the minimum 35mm cover and should be sleeved at these points to prevent wear should the slab move at this point.

## 5. Tube spacing

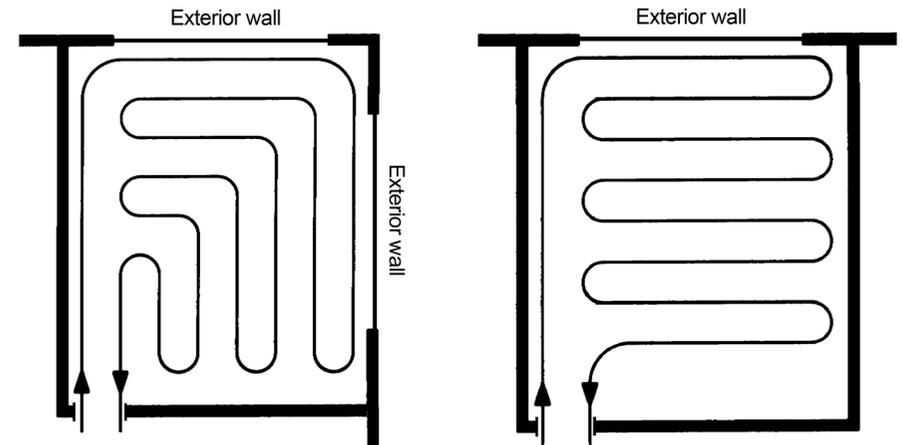
For residential applications tube spacing should be set at a minimum of 200mm centres to minimise the presence of heat 'banding' though the floor.



## 6. Circuit length

Maximum circuit length with ID12mm pipe should ideally not exceed 100 metres although 'occasional' longer circuits of up to 110m is acceptable.

## 7. Underfloor layouts



Coils should follow the serpentine pattern entering and leaving through the doorway. The hottest water should proceed directly to the coldest wall. Corner rooms should follow the double serpentine pattern where other rooms should follow a single serpentine. This allows the greatest heat into the coldest part of the room and allows the greatest comfort.

## 8. Pressure test

Once all the tube is installed, pressurise the system to 600 kPa and leave under test for the duration of the construction process to guard against accidental damage going unnoticed.

## 9. Wood floor overlays

Care should be exercised when using a wood overlay floor covering. Slab sensing is essential and should be set to within the maximum recommended temperature as specified by the flooring provider. Failure to do so could cause splitting and or lifting.

## 10. Corrosion control

To prevent corrosion to other metal components within the system a corrosion inhibitor should be added to the system and replaced annually. We recommend 'EverBuild Inhibitor Concentrate' ([www.waterware.co.nz/central-heating/system-treatments/Inhibitor/everbuild-inhibitor-concentrate](http://www.waterware.co.nz/central-heating/system-treatments/Inhibitor/everbuild-inhibitor-concentrate)) in a gun cartridge for easy application.