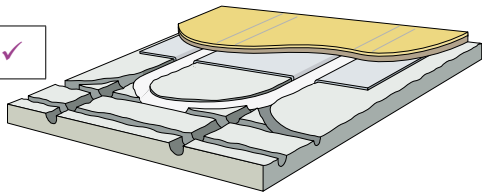
# Installation Instructions - Siccus Floating Floor System

| Pipe Dimensions | 9.9mm PEX | | 12mm PEX | ✓ | 16mm PEX | ✓ | 16mm MLC | ✓ | 20mm PEX | ✓ |
|---|---|---|---|---|---|---|---|---|---|---|



## Siccus Floating Floor System

The Floating Floor Panel can be laid on almost any existing floor surface. It is an ideal system for retrofitting UFH, or as an alternative to screeded floors.

## Siccus Floating Floor Panels

The pre-grooved insulation floor panel is made of polystyrene and designed for use with heat emission plates to distribute the heat over a wide area. When used on a ground floor installation, additional insulation may be required to ensure compliance with Building Regulations and to minimize downward losses (<= 10W/m$^2$).

## NEW Siccus FX

The new Siccus FX system is an alternative to traditional floating floors with a bonded foil heat emitting top surface as opposed to separate heat emission plates. The Siccus FX system can also be used for timber suspended and raised access floors.

## Surface Preparation

All subfloors should be clean, rigid and level prior to installing the underfloor heating system. Any projections must be levelled off as any imperfections in the slab will be projected through to the finished floor. The recommended maximum surface irregularity under a 3m long straight edge is 3mm in all directions. If a liquid based DPM has been used or self-levelling compound, it must be allowed to dry completely before laying any insulation. Where moisture control barriers are required these should be installed prior to laying the floating floor panels. It is a prudent precaution to install a moisture control barrier on all existing solid floors where the condition of the existing moisture barrier buried within the existing floor construction is unknown.

## Dimensional Details for 12mm PEX pipe

| 12mm PEX pipe | Panel thickness (mm) | Length x width (m) | pipe spacing (mm) |
|---|---|---|---|
| Main panel c/w heat emission plate | 15 | 1.2 x 0.75 | 125 |
| Feed & return panel | 15 | 1.2 x 0.75 | 62.5 |
| Heat emission plate | 0.3 | 1.18 x 0.11 | - |

## Dimensional Details for 16mm PEX and 16mm MLC pipes

| 16mm PEX & 16mm MLC | Panel thickness (mm) | Length x width (m) | pipe spacing (mm) |
|---|---|---|---|
| Panels for 16mm pipes | 50 | 1.2 x 1.2 | 200 |
| Double heat emission plate | - | 1.15 x 0.38 | |
| Insulation panel with bonded foil | 30 | 1.2 x 0.8 | |

## NEW Siccus FX

| 16mm PEX | Panel thickness (mm) | Length x width (m) | pipe spacing (mm) |
|---|---|---|---|
| Insulation panel with bonded foil | 30 | 1.2 x 0.8 | **200** |

## Dimensional Details for 20mm PEX pipe

| 20mm PEX pipe | Panel thickness (mm) | Length x width (m) | pipe spacing (mm) |
|---|---|---|---|
| Panels for 20mm pipes | 30 | 1.2 x 0.79 | 300 |
| | 50 | 1.2 x 0.79 | |
| Single heat emission plate | - | 1.15 x 0.28 | |

## Laying the Panels

Take care with the panels as they may easily be damaged. Lay the pre-grooved insulation panels across the whole floor, symmetrically keeping the grooves running across the floor area. It is preferable to stagger the rows of panels in a brick pattern to avoid 4 corners of adjacent sheets lining up. Avoid using small pieces of panels, especially around the perimeter.

## Additional Notes for 12mm PEX Floating Floors:

Visualise the route the feed pipes will take from the manifold to the heated room/area. If the manifold has 3 or more loops, you need to incorporate Feed Panels into the installation, this will allow feeds to be run at c/c 62.5mm pipe centres. If used determine the location of the Feed Panels, prior to laying the main Floor Panels within each room/area. The main Floor Panels have both bends and feed grooves at the panel header. These can be revealed by breaking off a small section of each heat emission plate.

To maintain an even floor height, 15mm plywood or chipboard (supplied by others) should be installed where underfloor heating is omitted, i.e. under baths, showers, kitchen units, etc. Insulation panel off-cuts should be used as infill pieces at doorways, etc.

## Cutting the Panels or Extra Grooves

It will be necessary to cut the panels in places, particularly in doorways and near to the manifold where the feed pipes congregate at less than standard centres. Use either a sharp long bladed knife or hand saw to cut the insulation boards. Additional grooves can be made in the insulation using a 230 volt polystyrene hot wire cutter (product code: 1006290). To cut 20mm PEX a replacement head (product code: 1002072) will also be required. Alternatively use a sharp knife or router to cut the groove.

## Siccus Floating floor system  for 16mm pipes




## Siccus Floating Floor System 12




### Laying the Siccus Heat Emission Plates

**Note: Not applicable for Siccus FX system**

For 16 and 20mm pipes the number of plates allowed is given in the materials schedule. Plates normally cover approximately 80% of the floor area. Lay the heat emission plates in the required configuration, prior to pressing them into the grooves in the insulation panels. This ensures that the appropriate quantity of plates, is set out across the entire area. Where possible, configure the plate positions to run parallel with the coldest external wall and windows. Leave a gap between the ends of the plates; there will normally be a gap between the sides of the plates. Where extra grooves are cut into the insulation, the edges of the plates should be cut to avoid them overlapping.

- Start at each end of the room with full size plates, leaving a 300mm gap from the wall edge for bending the UFH pipe through 180 degrees.
- Fill in the middle with sections of plates.
- Space the plates out evenly ensuring gaps are at least 10mm but less than 100mm.
- When the room is evenly covered with plates press them into the grooves in the polystyrene.
- For 12mm PEX (System 12) Snap off' heat emission plates removed from the floor panels should be used on the pipe tails installed in the outer grooves of floor and feeder panels.

### Cutting Plates

Apart from System 12 plates, plates are scored ⅓ from one end of the plate and at ⅙ from the other and are easily split along these score lines. Keep the pipe groove uppermost and sharply break the plate over a straight edge. If different lengths are required, score the plate deeply with a Stanley knife and cut along the pipe groove with a hacksaw.
Clean off the burrs in the pipe groove to prevent damage to the pipe.




### Pipe Bends

When laying the pipe, do not force the pipe into bends. It is easier to lay the pipe with a large radius and gently pull the pipe to the required bend before pressing into the next plate and insulation board.
Do not pull the pipe too tight or it may kink.

### Pipe Centres

The plates and insulation boards are manufactured with grooves set at the following pipe centres;

| | | |
|---|---|---|
| 12mm PEX | - | 125mm |
| 16mm PEX | - | 200mm |
| 16mm MLC | - | 200mm |
| 20mm PEX | - | 300mm |

## Laying the Pipe

- Where possible, the design will ensure that the flow pipes are directed to the coldest part of the room.
- Identify each floor area to be covered by each coil/loop of pipe (if you have received a design prepared by Uponor, the rooms to be heated and coils allocated can be identified on the quotation and/or layout drawings).
- When installing the pipe it is important to ensure the pipes do not cross over each other, therefore time should be spent, before actually laying any pipe, configuring the route for the feed pipes from the manifold location to their respective area/room to be heated.
- Typically feed pipes from the manifold go through door openings. However, where possible, to avoid any congestion around the manifold and through rooms adjoining the manifold location, feed pipes can be taken directly through partition walls and into the respective room. Ensure any holes drilled are below the floor level. When threading the pipe through the hole ensure it has been capped off and there are no sharp edges, which could score and damage the pipe. It is recommended that the UFH pipes, when passing through walls, are sleeved with Uponor protective conduit.
- Once you have a clear picture of the installation, you can begin to install and lay the pipe. First thread the first coil end behind the return manifold and connect onto the flow port manifold. If passing through a partition wall, first thread the pipe through the hole and up behind the return manifold.
  If using PEX pipe, 'pipe bend supports' must be fitted on every loop at the point where the pipe rises from the floor to connect to the manifold, i.e. 2 required per loop.
- Lay the pipe, pressing it into the plates grooves by hand or gently by foot. Where possible take the flow pipe to the coldest section of the room and meander the pipe up and down across the floor area towards the start position.
- It may be necessary to weigh down loop bends (do not use sharp objects), prior to laying the flooring and until the pipe has relaxed.
- Once the loop has been laid, take the pipe back to the manifold, following the same route out and connect the tail pipe to the corresponding return port on the manifold.

## Inspection

Once the pipes have been laid, it is important to inspect the system before laying the floor, to ensure the installation is correct and pipes are held firmly away from any possible damage.

## Pressure Testing

Once all the pipes have been laid and connected to the manifold, fill & pressure test the system as per instructions in Filliing, Venting and Pressure Testing section on page 81.

## Decking

The area should be decked immediately to protect the system. Foot traffic must be prohibited until this is carried out to protect the pipe and the panels.

Laminate floor finishes should be a minimum of 7mm thick with inter-locking joints.

Chipboard or plywood floor deck should be a minimum of 15mm thick with glued tongue and grooved edges.

If required an intermediate layer between the underfloor heating and the finish floor can be installed to minimise the risk of movement/expansion noise; use lightweight flooring cardboard, heavy gauge paper, polythene sheet or finish floor supplier's/manufacturer's solution to compensate for uneven and flexible subfloors.

As an alternative to laying tongue & groove chipboard flooring over the underfloor heating, 'Fermacell' or "Knauf" dry flooring element (20mm or 25mm depth) can be used as it offers a lower resistance to heat transfer than chipboard and plywood.

The final floor deck should be installed as per the manufacturers/suppliers instructions.

## New Siccus FX Outputs

**Pipe specification:**
16mm O/D PEX

**Floor construction:**
Timber Suspended or Floating Floor with foil faced insulation

**Floor decking:**
18 mm chipboard
Water temp drop [K]: 5

| Mean water temp MWT °C | Design room temp Rt °C |
|---|---|
| 45 | 16 |
| | 18 |
| | **20** |
| | 22 |
| | 24 |
| 50 | 16 |
| | 18 |
| | **20** |
| | 22 |
| | 24 |
| 55 | 16 |
| | 18 |
| | **20** |
| | 22 |
| | 24 |

| Pipe pitch, Vz [mm] 150 | | | |
|---|---|---|---|
| **Floor covering resistance, R λ,β [m² K/W]** | | | |
| 0.01 | 0.05 | 0.1 | 0.15 |
| **Heat emission, q [w/m²]** | | | |
| 69.4 | 63.6 | 55 | 49.2 |
| 64.6 | 59.2 | 51.2 | 45.8 |
| **59.8** | **54.8** | **47.3** | **42.4** |
| 55 | 50.4 | 43.5 | 38.9 |
| 50.2 | 46 | 39.7 | 35.5 |
| 81.5 | 74.7 | 64.5 | 57.7 |
| 76.6 | 70.3 | 60.7 | 54.3 |
| **71.8** | **65.8** | **56.9** | **50.9** |
| 67 | 61.4 | 53.1 | 47.5 |
| 62.2 | 57 | 49.2 | 44.1 |
| 93.5 | 85.7 | 74 | 66.2 |
| 88.7 | 81.3 | 70.2 | 62.8 |
| **83.9** | **76.9** | **66.4** | **59.4** |
| 79 | 72.5 | 62.6 | 56 |
| 74.2 | 68.1 | 58.8 | 52.6 |
| Exceeds 70 W/m² limit | | | |