



 floorheater

“Underfloor heating
made easy!”



The wonderful world of underfloor heating

Imagine being able to walk on a stone, wooden or tiled floor and feeling the luxury of warmth at your feet.

Investing in underfloor heating will not only provide efficient and all round warmth, it's a complete lifestyle change! Underfloor heating offers the easy route to a beautiful and discrete way to heat your home.

Floorheater offer an easy to install system, using panels which can be laid on top of any existing surface, without the usual need for time consuming and expensive concrete pouring and embedding that, with other systems, can take a month or more to set.

Developed by heating experts at the Royal Institute of Technology, Sweden, the Floorheater system uses high quality, super-thin but tough poly panels that have a unique bonded foil coating that diffuses heat with an efficiency that embedded systems can't even begin to match. The foil can easily be cut using an ordinary craft-knife and the panel quickly glued, screwed or nailed down on top of any surface in a matter of minutes.

The Floorheater underfloor heating system is easily fitted in a very short space of time. In fact, installation with the Floorheater panel is so straight forward that, for example, two persons could install underfloor heating in an area of up to 50 square metres in under a day!



Underfloor heating from Floorheater

- Provides all over warmth from the floor up
- Replaces the need for intrusive radiators
- Is quick and easy to install
- Doesn't raise the floor by more than 12mm!
- Is available in a DIY kit form ('The Box by Floorheater') for small areas, and as custom ordered systems for larger areas
- Is suitable for all types of flooring
- Provides fast response and delivery time

**The wonder of walking on a warm floor...
...created by underfloor heating**

About Floorheater systems

Floorheater systems are made up of high-density polystyrene panels with pre-formed grooves, covered with aluminium foil.

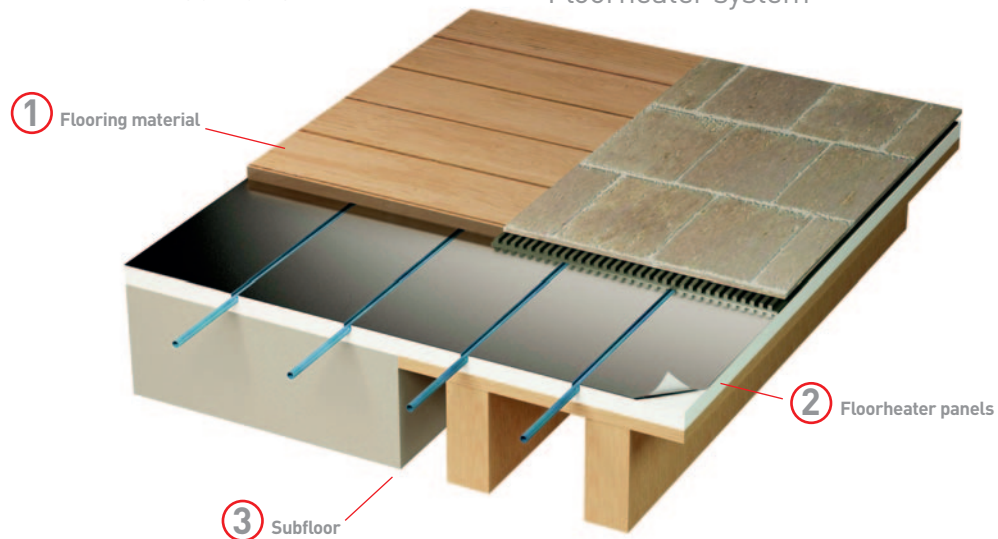
The panels are glued down to any flat and load-bearing surface, like a big jigsaw puzzle, to create continuous channels into which lengths of PEX-pipe are slotted.

Once down, the panels can be covered directly with tiles or engineered wood.

There is no need for any screed whatsoever!

Floor construction with Floorheater system

High-density polystyrene panels with pre-formed grooves, covered with aluminium foil



1 Flooring material

The Floorheater system can be used with any flooring type, but different floorings require different methods:

Wood should be kept floating (i.e. not fixed to the underfloor heating system). If the floorboards must be glued down they should be glued onto an intermediary layer of thin hardboard which should be laid floating. The total thickness of a wooden floor should never exceed 22mm.

Tiles can be laid directly onto the system. The tiles must be bigger than 150x150mm and you have to use the tile adhesive that we recommend.

Soft floorings, like carpet and vinyl require an intermediate layer of thin hardboard, which is glued onto the underfloor heating system.

2 The Floorheater panels

There are two different types of panels – the uninsulated 'Thin panel' and the insulated 'EasyPanel'.

The Thin panel is ideal for floors that are insulated already, and for floors that don't need insulation because the space below the floor is heated and part of the same household (a heated basement below, for example).

The EasyPanel has extra insulation underneath the pipe grooves to prevent downward heat loss. This is for floors where extra insulation is needed – like for example in cases where the subfloor is uninsulated and the space below isn't heated, and also where the space below the floor is heated but inhabited by someone else.

3 The subfloor must be flat and load bearing. The panels can normally be glued, stapled, screwed or nailed to the subfloor. Whenever tiles are to be laid on top of the underfloor heating system the panels must be glued down. Slab-on-ground constructions and joisted floors are special:

Slab-on-ground constructions without damp proof membrane require that the panels be fixed onto the subfloor using a regular tile adhesive. The waterborne floor glue that we normally use is not recommended in this particular case since moisture from the ground can travel up through the slab and dissolve the glue.

Joisted floors must be covered by a load-bearing board (18mm ply) before the underfloor heating system is installed. This also creates a safe surface for builders to walk on before the heating system is installed, right before the flooring material.



The Thin panel



The EasyPanel

If you plan to heat a small floor area of 36m² or less, turn the page to check out our DIY kit 'The Box by Floorheater'.

If you require more than 36m² please turn to page 10 and read about our 'custom ordered systems'.

THE BOX

by Floorheater



Our DIY kit system “The Box by Floorheater” is available in sizes of **6m²**, **9m²** and **12m²**, which can be combined as required to cover an area of up to **36m²**.

Each Box contains:

- One underfloor pipe circuit
- Poly-panels
- Pipe fittings
- Aluminium tape
- Bending units (to guide the pipe from the floor to the pump on the wall).



The Box is available with two different panel thicknesses: 12mm and 20mm. The 20mm version has extra insulation underneath the pipe grooves. We call this version of The Box “The Insulated Box”.



12mm



20mm

Supplied with The Box system is a high quality pump and mixing unit that comes with a standard wire thermostat. This thermostat can be upgraded to a wireless thermostat, if you prefer.



Pump and mixing unit with standard wire thermostat

For small floors, where only one Box is needed, the single floor circuit is connected directly to the pump and mixing unit (to the two pipes pointing downwards). For bigger floors, double or triple outlet manifold adaptors are attached to connect two or three circuits to the pump.



Triple outlet manifold adaptors

The Box system can be bought from www.floorheater.co.uk. There is a very easy ordering guide on the website which asks you a few questions to determine exactly what you need. You don't really need any knowledge of the components to place an order.

We have all components for The Box system including floor glue and tile adhesive in stock in Nottingham, so the system can be delivered the day after it's been ordered.

Technical specifications of **THE BOX** by Floorheater

The Panels:

Building height:	12.5mm. /20mm
Dimensions of straight panel:	1175 x 768mm
Dimensions of U-turn panel:	768 x 192mm
Groove's centre-centre spacing:	192 mm
Insulation material:	Compressed expanded polystyrene (EPS)
EPS density:	40 kg/m ²
Max short-term load:	300 kPa (~300 kg/dm ²)
Max long-term load:	120 kg/dm ² (12 tons/m ² distributed load)
Heat diffusion material:	Aluminium foil
Thermal conductivity of aluminium:	200 W/(m °C)
Foil thickness:	0.1 mm

The Pipe:

Dimensions:	12 x 1.1
Maximum pressure:	6 bar
Min. bending radius:	60mm
Maximum circuit length:	70m
Volume of water in a 70 metre circuit:	5.3 litres
Material:	PEX-EVOH-PEX (oxygen barrier)
PEX density:	944 kg/m ²
PEX elongation at break:	400%
PEX softening point temperature:	126°C
PEX thermal conductivity:	0.38 W/(m2K)

The pump unit with temperature reduction:

Pump brand:	WILO RS 15/4 – 3P	
Voltage:	230 V.	
Dimensions:	Length	35cm
	Height	13cm
	Depth	15cm (including bracket)
Enclosure class:	IP 44	
Maximum pressure:	10 bar	

Pump speed setting:	I	II	III
Speed:	1300rpm	1650rpm	2050rpm
Electric power:	30 W	46 W	65 W
Electric current:	0.13 A	0.20 A	0.28 A

Room temperature control: Delivered with a thermostatic head with capillary tube sensor, length 2m. (This may be upgraded to a wireless room thermostat).

Delivered with UK electrical plug, cable length 1.5m

Recommended Box setups for different sizes of floor areas:

0-6m ²	6m ² Box kit + pump
6.1-9m ²	9m ² Box kit + pump
9.1-12m ²	12m ² Box kit + pump
12.1-15m ²	6m ² Box kit + 9m ² Box kit + pump
15.1-18m ²	Two 9m ² Box kits + pump + double outlet manifold
18.1-21m ²	9m ² Box kit + 12m ² Box kit + pump + double outlet manifold
21.1-24m ²	Two 12m ² Box kits + pump + double outlet manifold
24.1-27m ²	Three 9m ² Box kits + pump + triple outlet manifold
27.1-30m ²	Two 9m ² Box kits + one 12m ² Box kit + pump + triple outlet manifold
30.1-33m ²	Two 12m ² Boxes + one 9m ² Box kit + pump + triple outlet manifold
33.1-36m ²	Three 12m ² Boxes + pump + triple outlet manifold

The Box kit contents:



The 6m² Box:

6 straight panels
6 U-turn panels
1 roll of aluminium tape
2 pipe fittings
2 bending units
40 m. pipe



The 9m² Box:

9 straight panels
9 U-turn panels
1 roll of aluminium tape
2 pipe fittings
2 bending units
55 m. pipe



The 12m² Box:

12 straight panels
11 U-turn panels
1 roll of aluminium tape
2 pipe fittings
2 bending units
70 m. pipe

Custom ordered systems

Our 'custom ordered systems' are designed for all projects larger than 36m²

A custom ordered system is generally made up of the following components:

- Thin panels, EasyPanels or a combination of both
- The 12mm pipe, the 16mm pipe, or a combination of both
- Different types of pumps for different sizes
- Manifolds with 2 – 10 outlets
- One or more controllable zones (i.e. thermostats)
- All necessary pipe fittings, etc.

The Pipe comes in two diameters: 12 and 16mm. The 12mm pipe is the real "ceiling height saver". The 16mm pipe is generally used only in projects bigger than 80m² since a thicker diameter allows for longer circuits.

The Thin panel is available in thicknesses of 12.5 and 16.5mm (generally referred to as "Thin12" and "Thin16" respectively). This is as thin as it gets!

The EasyPanel is available in total thicknesses of 18 and 25mm for the 12mm pipe, and 25 and 50mm for the 16mm pipe.

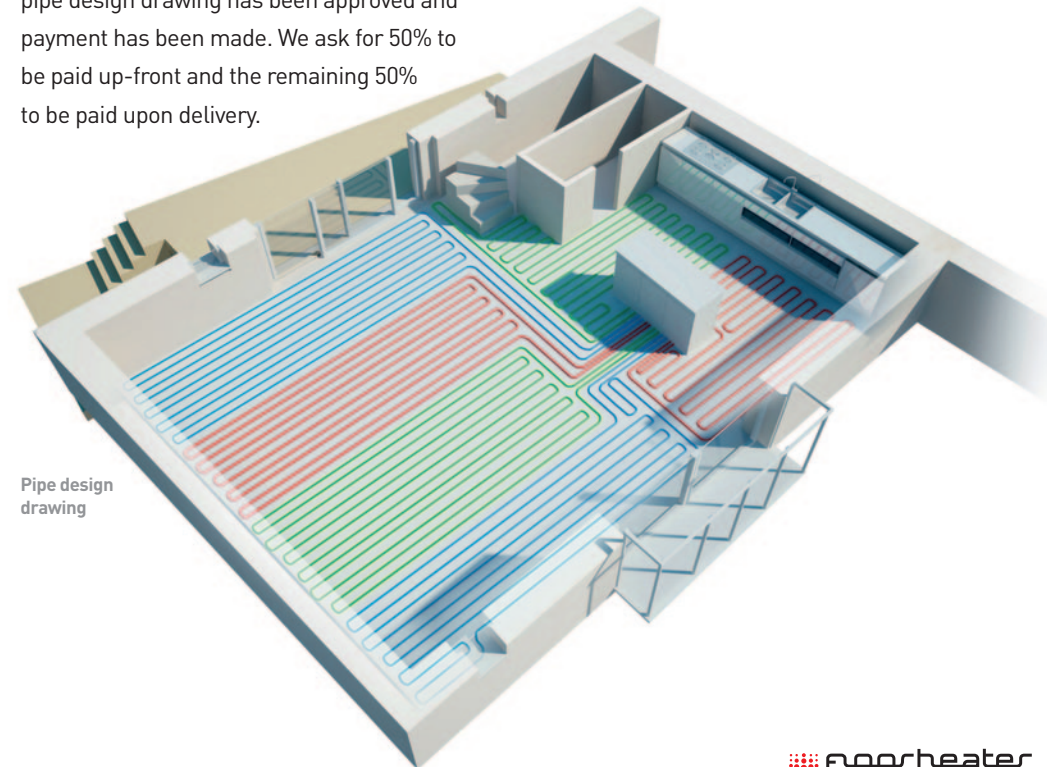
We produce Pipe Design Drawings based on the client's plans for all custom ordered systems.

Also, we perform complete heat-loss calculations on all custom projects to determine the flow-rate of each circuit.

The custom ordered systems are all sent from the factory in Sweden, so the delivery time is about 8 business days from when the pipe design drawing has been approved and payment has been made. We ask for 50% to be paid up-front and the remaining 50% to be paid upon delivery.

What to do next:

Please let us know the floor area size of your project in m², and also the number of thermostats required (usually one per room). We'll be able to get back to you with an approximate quotation based on this information very quickly. At this point, it is unnecessary to submit any architectural plans - that's the next stage.



Technical specifications of custom ordered systems

12mm-pipe systems - for areas between 36m² and 80m²

Panels for the 12mm pipe:

Thin 12:

Building height	12.5 mm
Insulation under pipe	None
Pipe groove's centre-centre spacing	192mm
Dimensions of straight panel:	1175 x 768mm
Dimensions of U-turn panel:	768 x 192mm

Thin 12, C-C 120:

Building height	12.5mm
Insulation under pipe	None
Pipe groove's centre-centre spacing	120mm
Dimensions of : straight panel	1175 x 768mm
Dimensions of U-turn panel:	768 x 192mm

EasyPanel 12/25

Building height	25mm
Insulation under pipe	13mm
Pipe groove's centre-centre spacing	200mm
Panel size	1175 x 800

The 12mm Pipe:

Dimensions:	12 x 1.1
Maximum circuit length:	70m.
Maximum area : per circuit	12m ²
Volume of water in a 70-metre circuit:	5.3 litres
Maximum pressure:	6 bar
Minimum bending radius:	60mm

16mm-pipe systems - for areas bigger than 80m²

Panels for the 16mm pipe:

Thin 16:

Building height	16.5mm
Pipe dimensions	16 x 2.0
Insulation under pipe	None
Pipe groove's centre-centre spacing	192mm
Dimensions of straight panel:	1175 x 768mm.
Dimensions of U-turn panel:	768 x 192mm

EasyPanel 16/25

Building height	25mm
Pipe dimensions	16 x 2.0
Insulation under pipe	9mm
Pipe groove's centre-centre spacing	200mm
Panel size	1175 x 800

The 16mm Pipe:

Dimensions:	16 x 2.0
Maximum circuit length:	85m
Maximum area per circuit:	18 m ²
Volume of water in a 85-metre circuit:	9.6 litres
Maximum pressure:	10 bar
Minimum bending radius:	80mm

General:

Polystyrene:

EPS density	40 kg/m ²
Max short-term load:	300 kPa (~300 kg/dm ²)
Max long-term load:	120 kg/dm ² (12 tons/m ² distributed load)

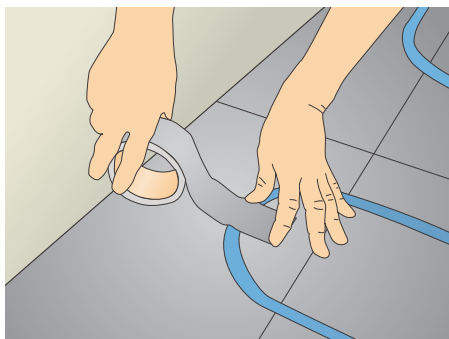
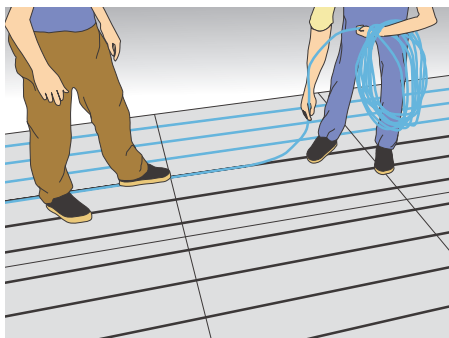
Aluminium foil:

Heat conductivity of aluminium	200 W/(m °C)
Aluminium foil thickness	0.1mm

PEX Pipe:

Material:	PEX-EVOH-PEX (oxygen barrier)
PEX density:	944 kg/m ²
PEX elongation at break:	400 %
PEX softening point temperature:	126°C
Max supply temperature	50°C
PEX thermal conductivity:	0.38 W/(m2K)

Installation instructions



1. Plan layout

Start by planning where the pipe will meet the manifold. Lay down panels along the walls of the room and cut them, if necessary, to fit better in corners etc. Mark the panels and remove them temporarily.

2. Laying the panels

Apply water-soluble floor glue to the sub-floor and lay the panels onto the glued surface as you make your way from one side of the room to the other. Give the glue time to settle and become sticky.

3. Preparing the pipe

Cut new in grooves in the polystyrene if necessary, using a knife or router, then line the walls of the new groove with aluminium tape. If the pipe must go through a wall, line the hole in the wall with protective plastic tubing. Remove all polystyrene residue and dust from the grooves.

4. Fitting the pipe

The pipe is easily fitted by two people, one feeds the cable from the roll and the other secures it in the groove. Use aluminium tape to keep the pipe down in the turns. Protect the heating system by covering it with boards in places where people need to walk.

5. Connecting the pipe

Connect the pipe to the manifold. Use bending units where the pipe leaves the groove.

6. Testing

Before the system is covered by flooring it must be pressure-tested by an authorised plumber.



floorheater.co.uk

Please contact us for a free quotation

info@floorheater.co.uk

0870 62 68 068