

# Underfloor Heating solutions guide



**uheat**

*providing underfloor heating since 2003*

# About us

Uheat specialises in the supply of underfloor heating systems, frost protection and related products for industrial, commercial and domestic applications.

From its inception in 2003 the company ethos has been to offer exemplary customer service coupled with a wide range of products that meet or exceed the companies demands for exceptional quality and value.

Our extensive range of underfloor heating / frost protection products can provide solutions for virtually any type of project. Whether it be a complete new build, renovation/refurbishment or extension.

Our manufacturing partners have been selected to ensure the best quality products are provided at value for money prices. We have exclusive partnerships with European Manufacturers which gives us the opportunity to offer unique and bespoke solutions.



Uheat is a trading style of the long established, family owned and managed Pedarson Ltd (the Pedarson Group).

[www.uheat.co.uk](http://www.uheat.co.uk)



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# Why Us?

With our unique 5-Point Promise you'll be sure we WON'T let you down...

## First let me tell you about the service we'll provide you:

- Full Design & Quote Service. Your tailored solution within 1 working day, no waiting around for days for quotes. You'll be able to respond to your customers quickly to win more business
- The Complete Package. We'll supply you with everything you'll need to install. No lost time waiting at trade counters for missing parts, we'll keep you installing and earning!
- Unlimited Technical Support. We have over 75 years of combined expertise in UFH, if you get stuck we're here to help you every step of the way
- Industry Leading Warranty. Total peace of mind for you and your customers. The products we've put together provide you with the best solutions from the world's leading brands, fully guaranteed
- One Stop Shop. We're here to help you take advantage of every opportunity, to minimise your efforts and maximise your profits when it comes to Underfloor Heating...



# Why Underfloor?

## Underfloor Heating v Radiators **The Key Differences**

Central Heating with radiators was introduced in the 30's and has since been used as the standard heating system for UK homes while remaining more or less unchanged for the past 8 decades. More recently, Underfloor Heating is being used in UK houses as the heating system of choice, offering unrivalled comfort and luxury. Below, you will find a comparison of these two systems, and an explanation of why we feel that Underfloor Heating is the best solution for heating a home.

### EFFICIENCY & COMFORT OF A SYSTEM

The way the heat is distributed impacts the efficiency and comfort of the heating system. Radiant heat heats object directly and it maintains the natural humidity in a room, whereas convection of warm air tends to reduce humidity, which can make the heated area feel stuffy. If the whole floor of the room is heated then radiant heat gives a very even spread of heat,

whereas conventional heating heats one area initially and then takes time to circulate to reach the required comfort levels. Rising air temperature through conventional heating can cause discomfort and overheating, which in turn can reduce oxygen levels, and ultimately breathing problems if the air is too warm.

Radiant floor heating provides heat where it is needed and reduces the risk of overheating the body and it is as close to ideal heating as possible.

### HEAT DISTRIBUTION

Your choice of a heating system determines the way heat is distributed. Underfloor heating produces radiant heat which makes you feel warm. The term radiant heating is used as radiation is responsible for a significant proportion of the 'thermal comfort' achieved by this form of heating. Radiators work by heating the air surrounding them using convection. The air heated by a radiator rises towards the ceiling and once this warm air has cooled down, it falls down to the ground level to be heated by the convection of the radiator again. This creates a flow of hot and cold air and inevitably, hot and cold spots where areas near to the radiators are warmer than the areas elsewhere in the room.





# Complete House

New Build or refurbishment, we have a solution for every floor structure.

## GROUND FLOORS

Ground floors are typically constructed with a floor screed so our in screed systems are perfect.

### UltraFix Clip ①

### UltraFix Rail ②

## UPPER FLOORS

Most upper floor have a timber suspended floor, which we have a variety of solutions.

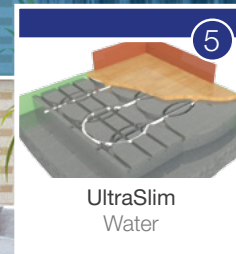
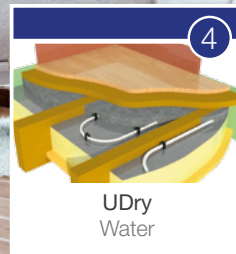
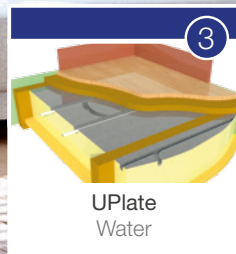
### UPlate ③

### UDry ④

## EXISTING FLOOR?

If your floor is existing and you can't or don't want to remove it, then UltraSlim system, which can be as thin as 18mm.

### UltraSlim ⑤



### Top tip

If you choose carpet as your floor finish, make sure the combined TOG value of the carpet and underlay does not exceed 2.5 TOG.

### Other options

If you're not on mainline gas then you really should consider one of electric underfloor heating solutions. They are economical to run and the maintenance costs are practically zero.

## Neil

"Ultrafix is fast & easy to install, reducing install time and costs. It has high efficiency because it utilises the thermal mass of the screed to provide maximum output"





# Extension

## GROUND FLOORS

Ground floors are typically constructed with a floor screed so our in screed systems are perfect.

### UltraFix Clip ①

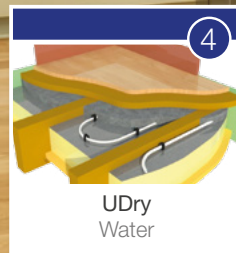
### UltraFix Rail ②

## UPPER FLOORS

Most upper floor have a timber suspended floor, which we have a variety of solutions.

### UPlate ③

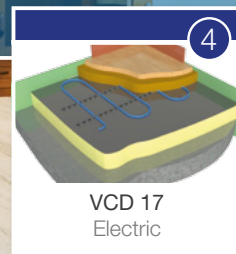
### UDry ④



Electric systems can be perfect for any extension as they can reduce initial costs and can be easier to install.

### VCD 17 ④

### Heating Mat ⑤



### Top tip

If you're adding a water underfloor heating system to your existing central heating boiler, please ensure that it has sufficient capacity for the new load.

### Other options

If you've already laid your base floor, then one of our retrofit systems would be an ideal solution.



*Keith*

*"MD heating mats are fast and simple to install, saving time & money. As they are very thin, the floor height will be raised by the minimum amount."*





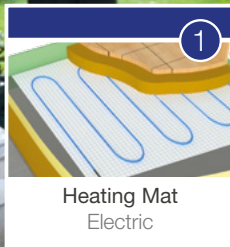
# Conservatory / Winter Garden

## CONSERVATORY & WINTER GARDEN

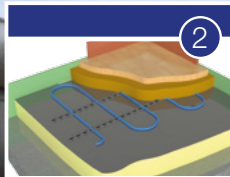
The easiest and most cost effective way to add underfloor heating to a conservatory, is to install an electric underfloor heating system. VCD 17

**Heat Mat** ①

**VCD 17** ②



Heating Mat  
Electric



VCD 17  
Electric

### Top tip

solid floor tiles or stone flooring have the lowest thermal resistance of all flooring types so use these to ensure maximum heat output. Especially important when heating higher heat loss areas.

### Other options

if your conservatory is a new build with a new floor screed then you can use one of our UltraFix water underfloor heating systems.

## Jake

"VCD17 is our in-screed heating cable system which has the flexibility to work with most floor coverings and offers the opportunity to use off peak electricity tariffs"



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01394 384 077



# Bathroom / Wetroom / En-Suite

## BATHROOM / WETROOM / EN - SUITE

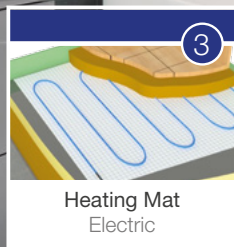
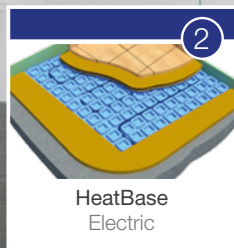
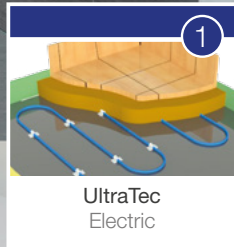
Typically underfloor heating is installed in a bathroom, wetroom or wc when they are being refurbished.

With this in mind, the easiest method is to install a very thin electric underfloor heating system.

**UltraTec** ①

**HeatBase** ②

**Heating Mat** ③



## Top tip

Although it is permissible to install the thermostat inside the bathroom under certain conditions, we always recommend that the thermostat is installed outside the bathroom with the floor sensor in the bathroom. This will prevent steam / moisture causing any problems with the thermostat and ensure that it works efficiently.

## Other options

A water based system can be installed in a small area and connected to the local radiator circuit, if it does not exceed 15m<sup>2</sup>.

## Neil

"UltraTec is probably the thinnest & Strongest under tile heating cable available in the UK, reducing the amount of tile adhesive or self-levelling compound you need to cover the cable"



# Kitchen

## KITCHEN

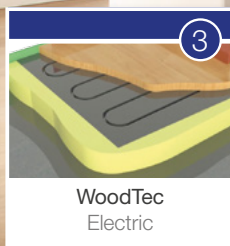
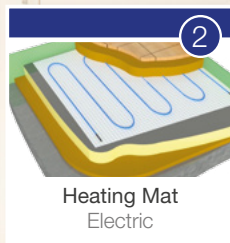
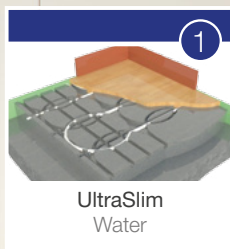
Underfloor heating in the kitchen just adds that touch of luxury. Once you've experienced warm tiles you'll never install tiles / stone without underfloor heating.

With this in mind, the easiest method is to install a very thin electric underfloor heating system.

**UltraSlim** ①

**Heating Mat** ②

**WoodTec** ③



### Top tip

Installing a thin insulation such as Thermopanel or EkoBoard under the electric heating will improve the warmup time and reduce your running costs.

### Other options

- If your kitchen is a new build, then you may have the opportunity to install an in screed system (water & electric) which can be more economical to purchase & operate.

## Wojtek

"UltraSlim is the perfect solution for renovation projects, being only 18mm deep and able to have some floor finishes installed with no further layers."

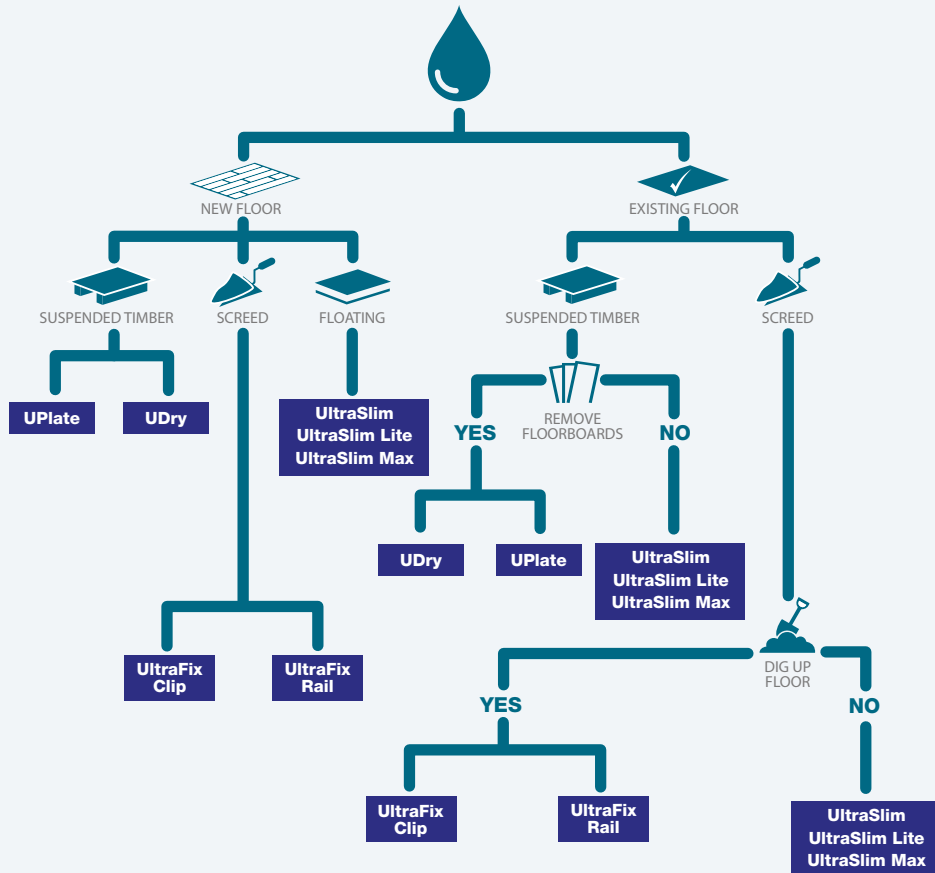




# Water

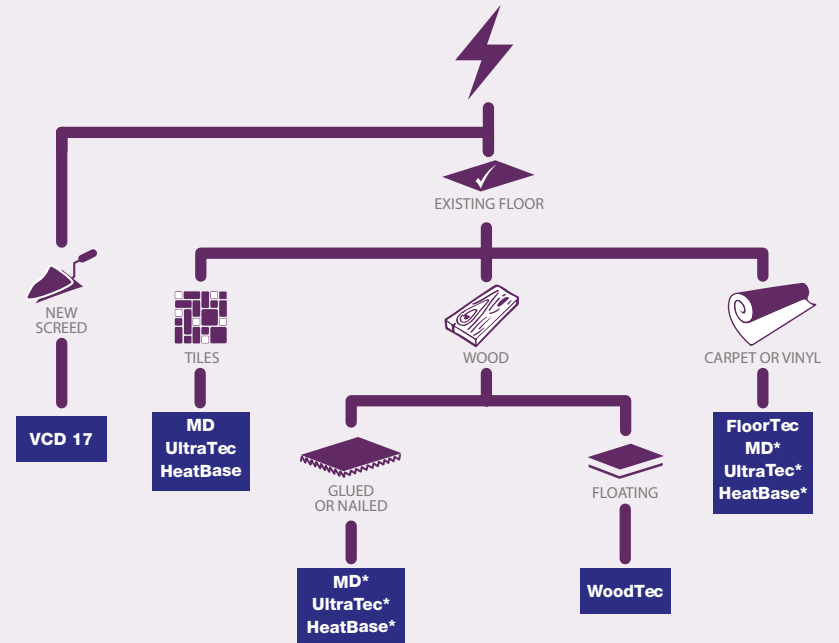
# Electric

## WATER UNDERFLOOR HEATING



See pages 18 - 24

## ELECTRIC UNDERFLOOR HEATING



See pages 25 - 30

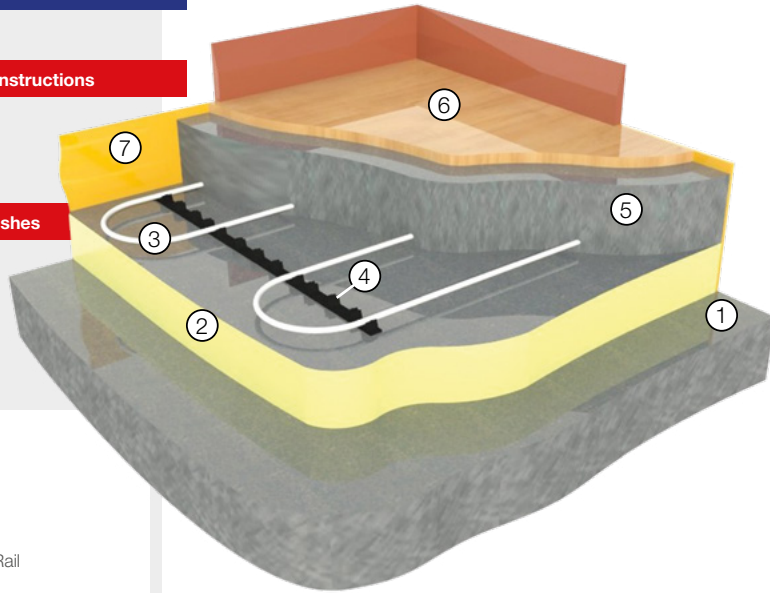
## UltraFix Rail

### Suitable floor Constructions

Solid / Screed  
Beam & Block

### Suitable floor finishes

Tiles  
Wood  
Vinyl  
Carpet



- ① Sub-Floor
- ② Insulation
- ③ Adept Pipe
- ④ Adept Grip Rail
- ⑤ Screed
- ⑥ Floor Finish
- ⑦ Edge Insulation

#### Tools Required

Pipe Cutter  
Pipe Reamer / Beveller  
Power Drill  
Spanner  
Hydraulic Test Pump

#### Used for:-

Cut pipe to length  
Prepare pipe for connection  
Drill fixings for manifold  
Tighten pipe fittings  
Pressure test pipe loops

#### Materials Available from **uheat**

Complete Kits (Standard & Bespoke)  
Pipe  
Pipe Clips  
Manifolds  
Pump / Mixer Sets  
Pipe Fittings  
Thermostats & Controls  
Tools

#### Notes:

- Insulation should be rigid PIR
- Some insulation / screed combinations require a vapour barrier to be installed directly on the insulation before you install the pipe and lay the screed.
- To comply with building regulations, you should use a minimum 65mm sand / cement screed or 50mm pumped screed.

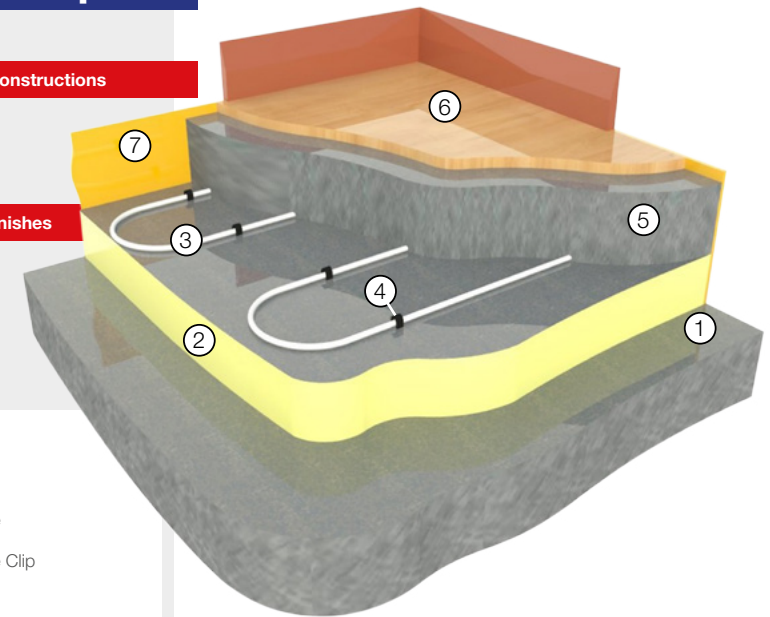
## UltraFix Clip

### Suitable floor Constructions

Solid / Screed  
Beam & Block

### Suitable floor finishes

Tiles  
Wood  
Vinyl  
Carpet



- ① Sub-Floor
- ② Insulation
- ③ Adept Pipe
- ④ Adept Pipe Clip
- ⑤ Screed
- ⑥ Floor Finish
- ⑦ Edge Insulation

#### Tools Required

Pipe Cutter  
Pipe Reamer / Beveller  
Power Drill  
Spanner  
Hydraulic Test Pump

#### Used for:-

Cut pipe to length  
Prepare pipe for connection  
Drill fixings for manifold  
Tighten pipe fittings  
Pressure test pipe loops

#### Materials Available from **uheat**

Complete Kits (Standard & Bespoke)  
Pipe  
Pipe Clips  
Manifolds  
Pump / Mixer Sets  
Pipe Fittings  
Thermostats & Controls  
Tools

#### Notes:

- Insulation should be rigid PIR
- Some insulation / screed combinations require a vapour barrier to be installed directly on the insulation before you install the pipe and lay the screed.
- To comply with building regulations, you should use a minimum 65mm sand / cement screed or 50mm pumped screed.



## UDry

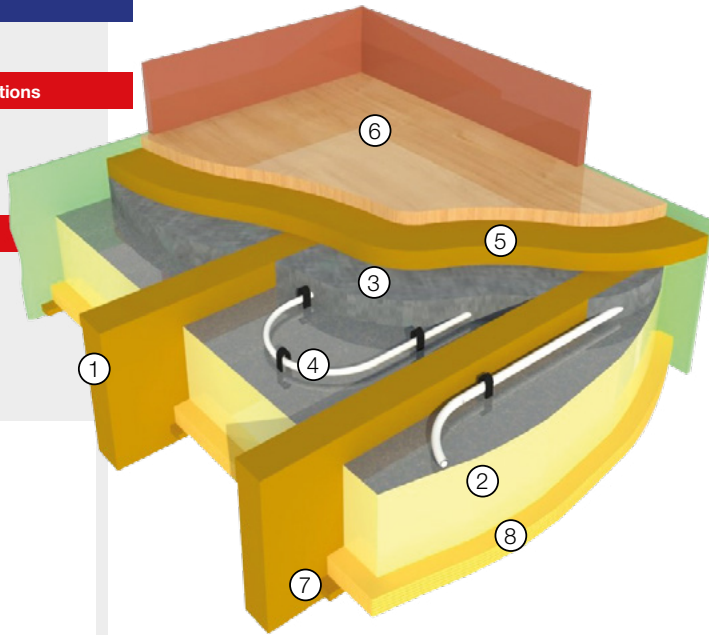
### Suitable floor Constructions

Suspended Timber  
Batten Floor

### Suitable floor finishes

Tiles  
Wood  
Vinyl  
Carpet

- ① Joist
- ② Insulation
- ③ Dry Screed
- ④ Adept Pipe
- ⑤ Floorboard
- ⑥ Floor Finish
- ⑦ Noggin / Batten
- ⑧ Plywood



#### Tools Required

Pipe Cutter  
Pipe Reamer / Beveller  
Power Drill  
Spanner  
Hydraulic Test Pump

#### Used for:-

Cut pipe to length  
Prepare pipe for connection  
Drill fixings for manifold  
Tighten pipe fittings  
Pressure test pipe loops

#### Materials Available from **uheat**

Complete Kits (Standard & Bespoke)  
Pipe  
Pipe Clips  
Manifolds  
Pump / Mixer Sets  
Pipe Fittings  
Thermostats & Controls  
Tools

#### Notes:

- Insulation should be rigid PIR
- Some insulation / screed combinations require a vapour barrier to be installed directly on the insulation before you install the pipe and lay the screed.

## UPlate

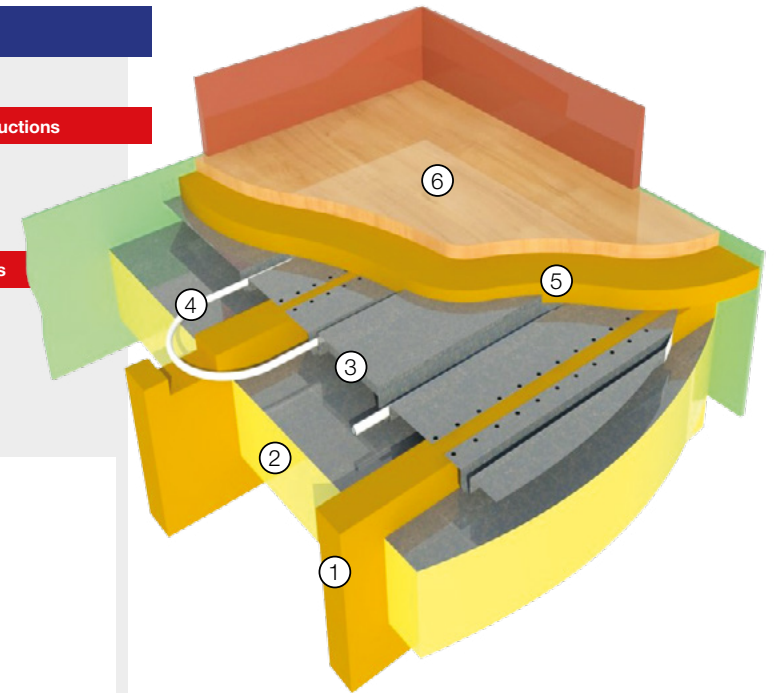
### Suitable floor Constructions

Suspended Timber  
Batten Floor

### Suitable floor finishes

Tiles  
Wood  
Vinyl  
Carpet

- ① Joist
- ② Insulation
- ③ Adept Alu Plate
- ④ Adept Pipe
- ⑤ Floorboard
- ⑥ Floor Finish



#### Tools Required

Pipe Cutter  
Pipe Reamer / Beveller  
Power Drill  
Spanner  
Hydraulic Test Pump

#### Optional Tools

Hammer

#### Used for:-

Cut pipe to length  
Prepare pipe for connection  
Drill fixings for manifold  
Tighten pipe fittings  
Pressure test pipe loops

#### Materials Available from **uheat**

Complete Kits (Standard & Bespoke)  
Pipe  
Pipe Clips  
Manifolds  
Pump / Mixer Sets  
Pipe Fittings  
Thermostats & Controls  
Tools

#### Notes:

- Insulation is typically rockwool but rigid insulation can be used.

## UltraSlim Lite

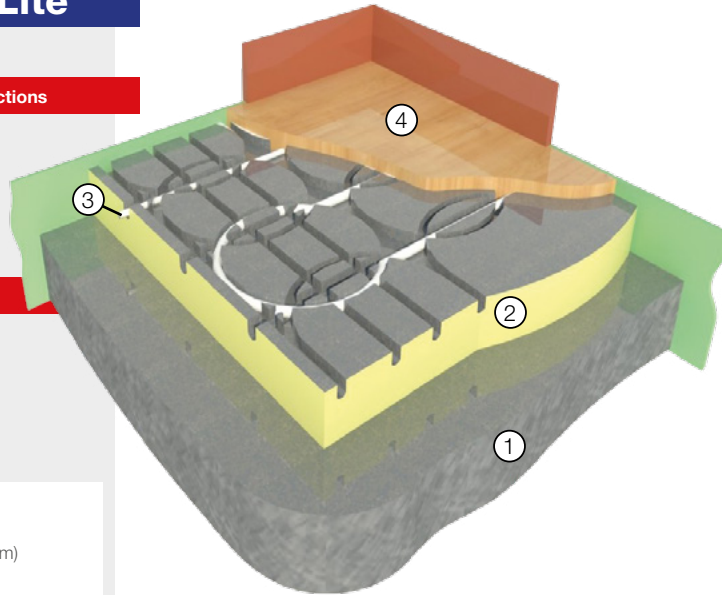
### Suitable floor Constructions

Solid / Screed  
Beam & Block  
Suspended Timber  
Batten Floor

### Suitable floor finishes

Tiles  
Wood  
Vinyl  
Carpet

- ① Base-Floor
- ② UltraSlim Lite (18mm)
- ③ Adept Pipe
- ④ Floor Finish



## UltraSlim

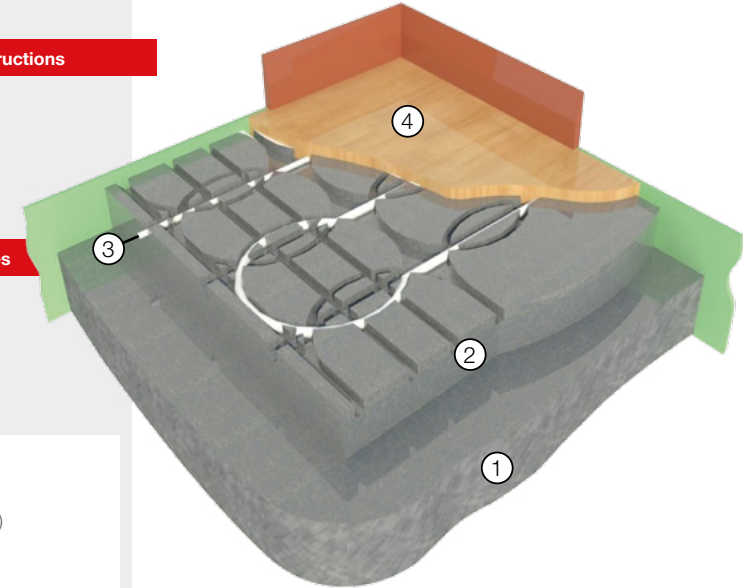
### Suitable floor Constructions

Solid / Screed  
Beam & Block  
Suspended Timber  
Batten Floor

### Suitable floor finishes

Tiles  
Wood  
Vinyl  
Carpet

- ① Base Floor
- ② UltraSlim (18mm)
- ③ Adept Pipe
- ④ Floor Finish



#### Tools Required

Pipe Cutter  
Power Drill  
Spanner  
Hydraulic Test Pump  
Knife

#### Used for:-

Cut pipe to length  
Drill fixings for manifold  
Tighten pipe fittings  
Pressure test pipe loops  
Cut Panels

#### Materials Available from **uheat**

Complete Kits (Standard & Bespoke)  
Pipe  
Pipe Clips  
Manifolds  
Pump / Mixer Sets  
Pipe Fittings  
Thermostats & Controls  
Tools

#### Notes:

- Tile, Vinyl & Carpet floor finishes will need overboarding with minimum 6mm plywood before you install the floor finish

#### Tools Required

Pipe Cutter  
Power Drill  
Spanner  
Hydraulic Test Pump  
Knife

#### Used for:-

Cut pipe to length  
Drill fixings for manifold  
Tighten pipe fittings  
Pressure test pipe loops  
Cut Panels

#### Materials Available from **uheat**

Complete Kits (Standard & Bespoke)  
Pipe  
Pipe Clips  
Manifolds  
Pump / Mixer Sets  
Pipe Fittings  
Thermostats & Controls  
Tools

#### Notes:

- Vinyl & Carpet floor finishes will need overboarding with minimum 6mm plywood before you install the floor finish



## UltraSlim Max

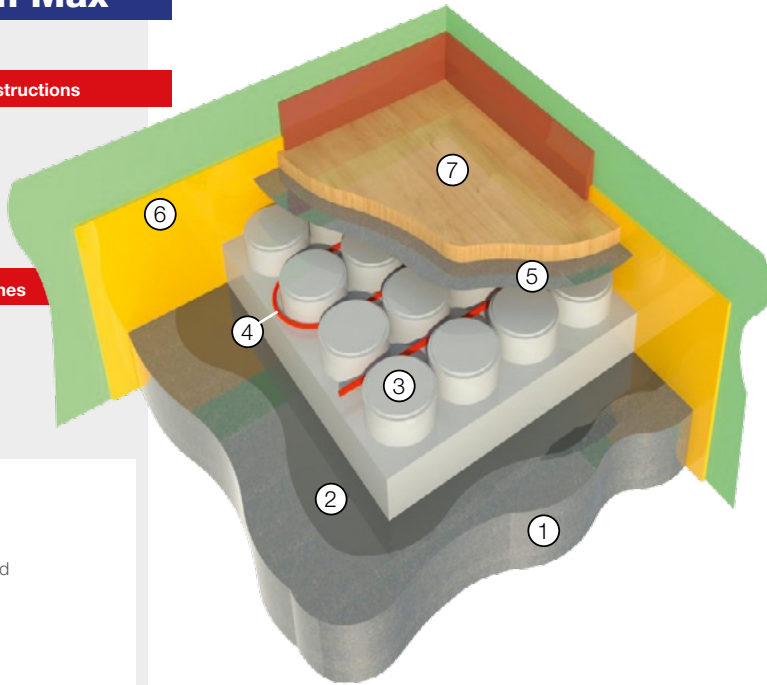
### Suitable floor Constructions

Solid / Screed  
Beam & Block  
Suspended Timber  
Batten Floor

### Suitable floor finishes

Tiles  
Wood  
Vinyl  
Carpet

- ① Base Floor
- ② Insulation
- ③ UltraSlim Board
- ④ Adept Pipe
- ⑤ Compound
- ⑥ Edge Insulation
- ⑦ Floor Finish



#### Tools Required

Pipe Cutter  
Pipe Reamer / Beveller  
Power Drill  
Spanner  
Hydraulic Test Pump  
Saw

#### Used for:-

Cut pipe to length  
Prepare pipe for connection  
Drill fixings for manifold  
Tighten pipe fittings  
Pressure test pipe loops  
Cut Panels

#### Materials Available from **uheat**

Complete Kits (Standard & Bespoke)  
Pipe  
Pipe Clips  
Manifolds  
Pump / Mixer Sets  
Pipe Fittings  
Thermostats & Controls  
Tools

#### Notes:

For soft floor coverings (carpet / vinyl) and synthetic resin floors, a calcium sulphate based levelling compound of at least 4mm should be laid over the complete UltraSlim Max system

## VCD 17

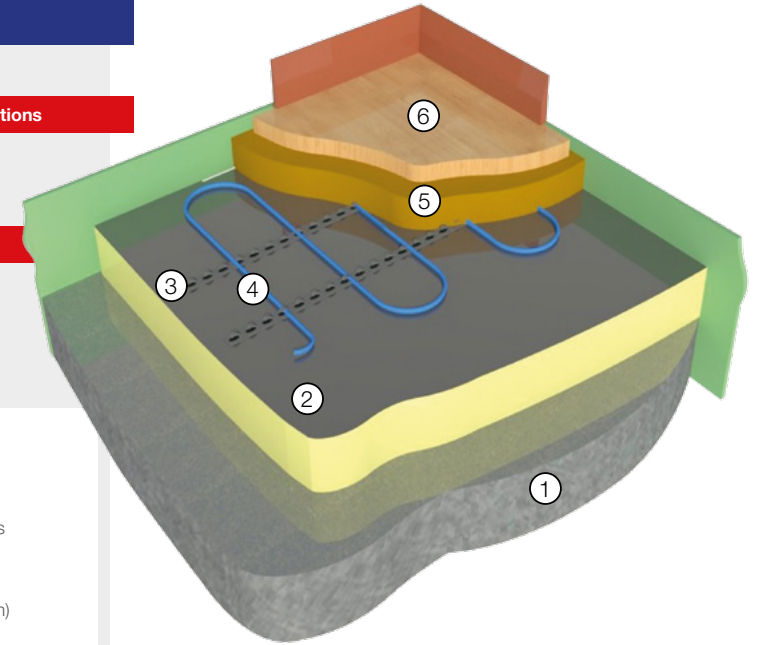
### Suitable floor Constructions

Solid / Screed  
Beam & Block

### Suitable floor finishes

Tiles  
Wood  
Vinyl  
Carpet

- ① Sub-floor
- ② Insulation
- ③ Metal Fixing Bands
- ④ Heating cable
- ⑤ Screed (min 50mm)
- ⑥ Floor Finish



#### Tools Required

Multimeter  
Insulation Resistance  
Tester  
Screwdrivers

#### Used for:-

Testing Resistance  
Testing Insulation Resistance  
Connecting Thermostat

#### Materials Available from **uheat**

Complete Kits (Standard & Bespoke)  
Heating Cables  
Thermostats with Floor Sensor  
Insulation  
Flexible Tile Adhesive  
Levelling Compound  
Tools

#### Notes:

- Insulation should be rigid PIR
- Some insulation / screed combinations require a vapour barrier to be installed directly on the insulation before you install the cable and lay the screed.
- To comply with building regulations, you should use a minimum 65mm sand / cement screed or 50mm pumped screed.

## MD

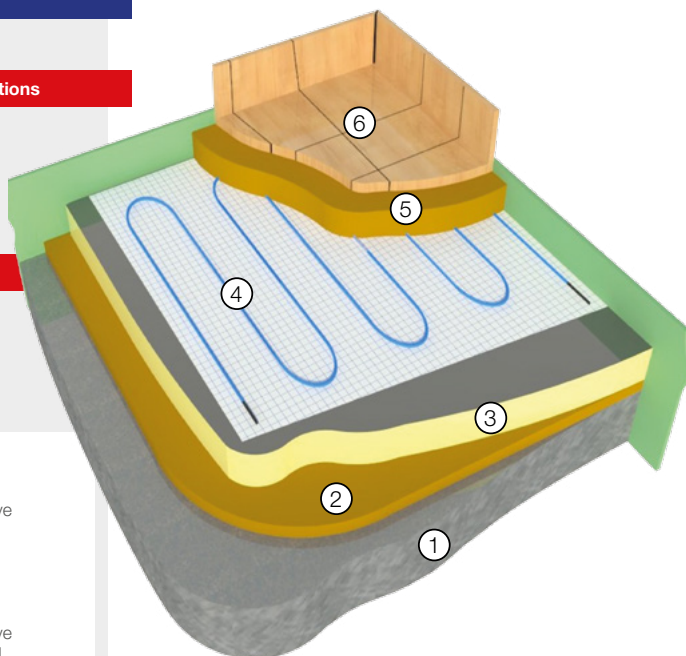
### Suitable floor Constructions

Solid / Screed  
Beam & Block  
Suspended Timber  
Batten Floor

### Suitable floor finishes

Tiles  
Wood  
Vinyl  
Carpet

- ① Base Floor
- ② Flexible Tile Adhesive
- ③ Insulation
- ④ MD Heating Mat
- ⑤ Flexible Tile Adhesive and / or Compound
- ⑥ Floor Finish



#### Tools Required

Multimeter  
Insulation Resistance Tester  
Scissors  
Screwdrivers

#### Used for:-

Testing Resistance  
Testing Insulation Resistance  
Cutting Heating Mat  
Connecting Thermostat

#### Materials Available from **uheat**

Complete Kits (Standard & Bespoke)  
Heating Mats  
Thermostats with Floor Sensor  
Insulation  
Flexible Tile Adhesive  
Levelling Compound  
Tools

#### Notes:

- Insulation is optional underneath the heating mats but it will reduce the warmup time and reduce running costs so it should always be used if possible.
- If the floor finish is tiles, then you can either use flexible tile adhesive directly on the heating mat or self-level over the heating mat then fix the tiles with flexible tile adhesive.
- If you're going to use MD heating mats under wood, vinyl or carpet, then you will need to use a levelling compound over the mat before installing the floor finish.

## UltraTec

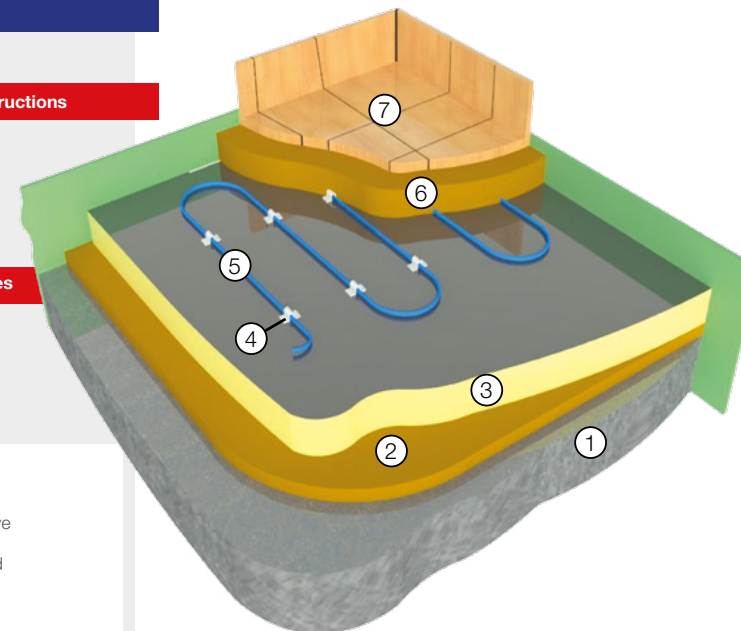
### Suitable floor Constructions

Solid / Screed  
Beam & Block  
Suspended Timber  
Batten Floor

### Suitable floor finishes

Tiles  
Wood  
Vinyl  
Carpet

- ① Sub-floor
- ② Flexible Adhesive
- ③ Insulation Board
- ④ Tape
- ⑤ Loose wire
- ⑥ Flexible Adhesive
- ⑦ Floor Finish



#### Tools Required

Multimeter  
Insulation Resistance Tester  
Screwdrivers

#### Used for:-

Testing Resistance  
Testing Insulation Resistance  
Connecting Thermostat

#### Materials Available from **uheat**

Complete Kits (Standard & Bespoke)  
Heating Cables  
Thermostats with Floor Sensor  
Insulation  
Flexible Tile Adhesive  
Levelling Compound  
Tools

#### Notes:

- Insulation is optional underneath the heating cables but it will reduce the warmup time and reduce running costs so it should always be used if possible.
- If the floor finish is tiles, then you can either use flexible tile adhesive directly on the heating mat or self-level over the heating cable then fix the tiles with flexible tile adhesive.
- If you're going to use UltraTec heating cables under wood, vinyl or carpet, then you will need to use a levelling compound over the cable before installing the floor finish.



## WoodTec

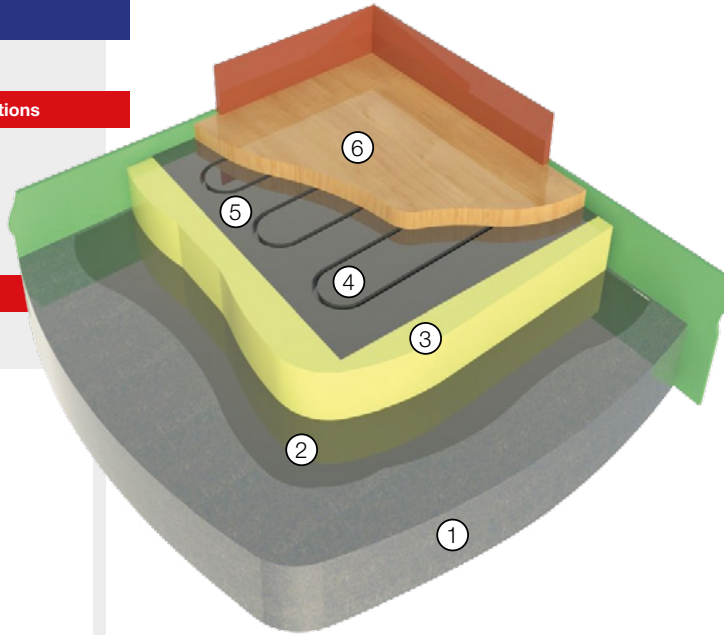
### Suitable floor Constructions

Solid / Screed  
Beam & Block  
Suspended Timber  
Batten Floor

### Suitable floor finishes

Wood

- ① Sub-floor
- ② Vapour Barrier
- ③ Insulated Underlay
- ④ Foil Heater
- ⑤ Protective Sheet
- ⑥ Floor Finish



### Tools Required

Multimeter  
Insulation Resistance Tester  
Scissors  
Screwdrivers

### Used for:-

Testing Resistance  
Testing Insulation Resistance  
Cutting Heating Mat  
Connecting Thermostat

### Materials Available from **uheat**

Complete Kits (Standard & Bespoke)  
Heating Mats  
Thermostats with Floor Sensor  
Insulation  
Tools

### Notes:

- It is essential that a 6mm XPS insulating underlay, such as Izotherm, is used under the WoodTec heating mats.
- Your laminate or engineered wood flooring can be laid directly WoodTec system without the need for any other underlay.

## FloorTec

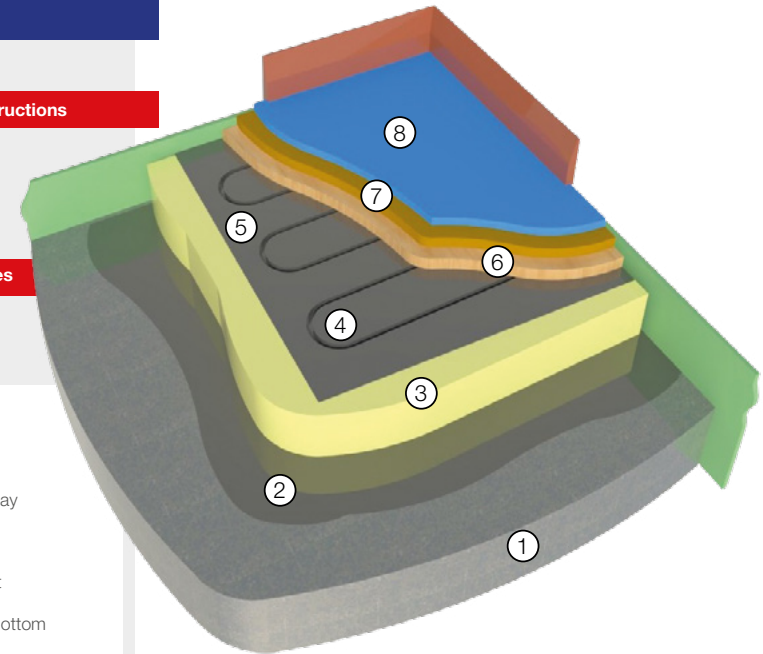
### Suitable floor Constructions

Solid / Screed  
Beam & Block  
Suspended Timber  
Batten Floor

### Suitable floor finishes

Vinyl  
Carpet

- ① Sub-floor
- ② Vapour Barrier
- ③ Insulated Underlay
- ④ Foil Heater
- ⑤ Protective Sheet
- ⑥ Dual Overlay - Bottom
- ⑦ Dual Overlay - Top
- ⑧ Floor Finish



### Tools Required

Multimeter  
Insulation Resistance Tester  
Scissors  
Screwdrivers

### Used for:-

Testing Resistance  
Testing Insulation Resistance  
Cutting Heating Mat  
Connecting Thermostat

### Materials Available from **uheat**

Complete Kits (Standard & Bespoke)  
Heating Mats  
Thermostats with Floor Sensor  
Insulation  
Tools

### Notes:

- It is essential that a 6mm XPS insulating underlay, such as Izotherm, is used under the WoodTec heating mats.
- The thermal resistance of your floor covering (Carpet + Underlay) should not exceed 2.5 TOG.

## HeatBase

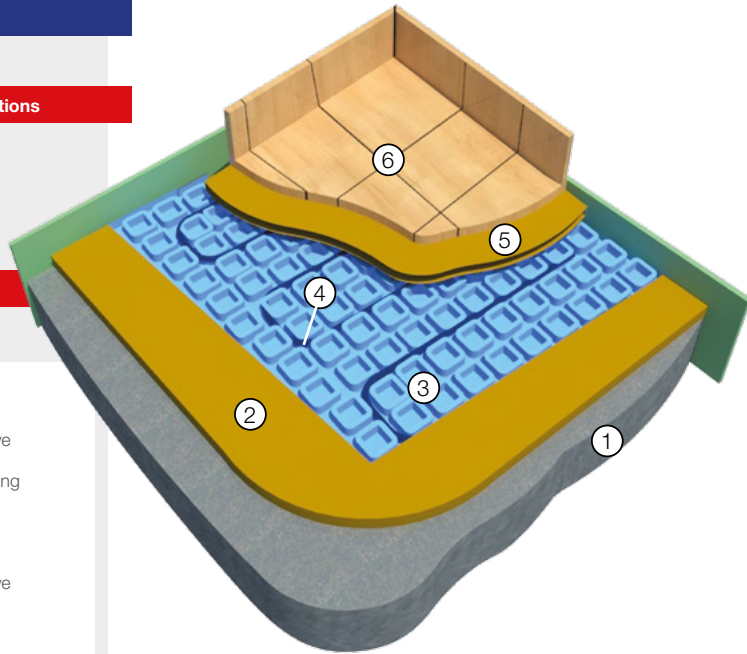
### Suitable floor Constructions

Solid / Screed  
Beam & Block  
Suspended Timber  
Batten Floor

### Suitable floor finishes

Tiles

- ① Sub-floor
- ② Flexible Tile Adhesive
- ③ Heat Base Decoupling Membrane
- ④ Heating Cable
- ⑤ Flexible Tile Adhesive
- ⑥ Floor Tiles



#### Tools Required

Multimeter  
Insulation Resistance Tester  
Screwdrivers

#### Used for:-

Testing Resistance  
Testing Insulation Resistance  
Connecting Thermostat

#### Materials Available from **uheat**

Complete Kits (Standard & Bespoke)  
Heating Cables  
Thermostats with Floor Sensor  
Insulation  
Flexible Tile Adhesive  
Levelling Compound  
Tools  
Decoupling Membrane

#### Notes:

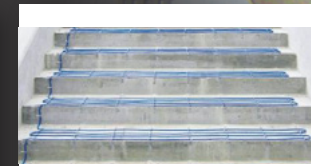
- You must use flexible tile adhesive to secure the HeatBase mat to the floor and to fix the tiles on top of the heating cable / HeatBase mat
- As you are using Heatbase, you will not need any other decoupling membrane.

# other solutions

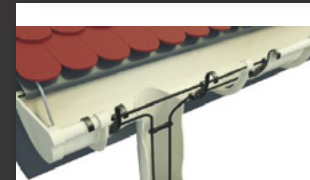
Our exclusive partnership with Elektra, means that we are able to provide snow and ice protection systems for a wide variety of projects.



Snow & Ice Protection for Driveways & Ramps



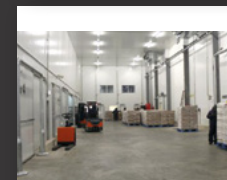
Heating Cable on Stairs



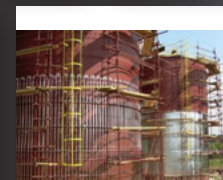
UV resistant heating cable keeping gutters & drainpipes ice/snow free



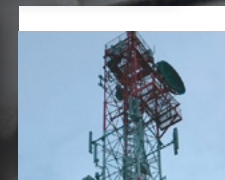
Heat Trace Cable preventing pipes freezing



Cold store Floor Heating



Frost Protect Industrial Tanks



Preventing Snow & ice on Aerial Masts



Satellite Dish with heating cables



Please visit [www.uheat.co.uk](http://www.uheat.co.uk) to request our product catalogues

