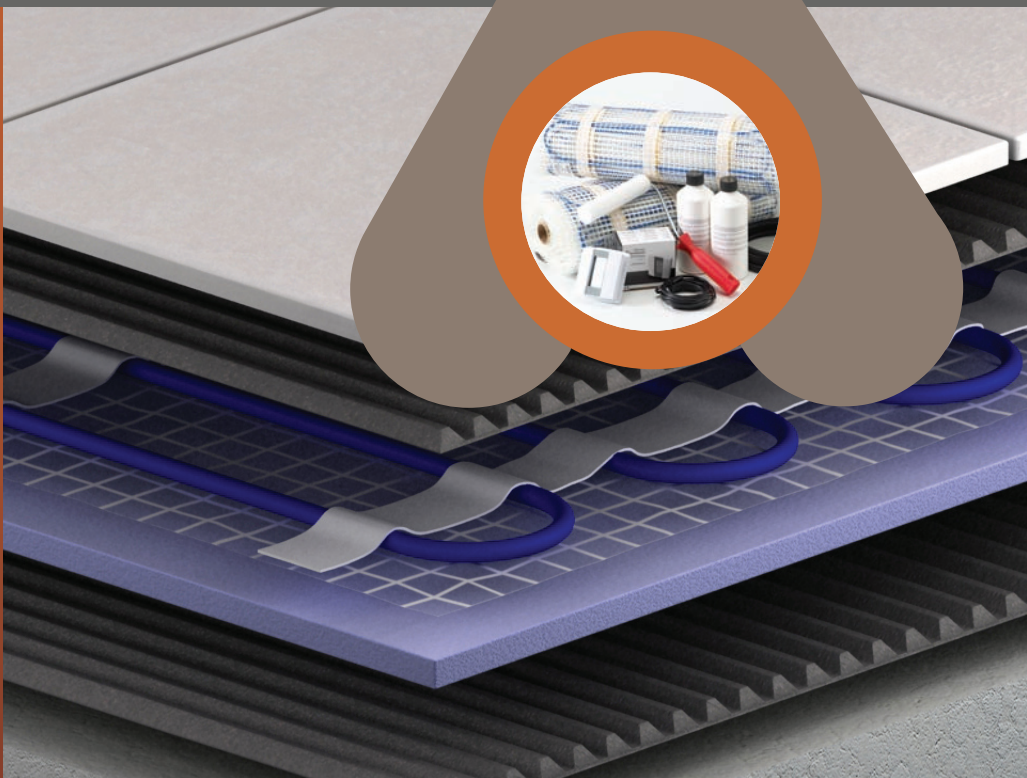




Under Tile Heating Mat Installation Instructions



Under Tile Heating Mat ambi-Heat brand manufactured by Thermopads

Before you begin installing please read through these instructions carefully & check that you have all the components required.

The system is designed for installation below tiles, stone or marble flooring, it may also be installed below vinyl, laminate & thin carpets but in these cases must first be covered with a suitable latex-based floor levelling compound.

CONTENTS OF HEATING KIT:

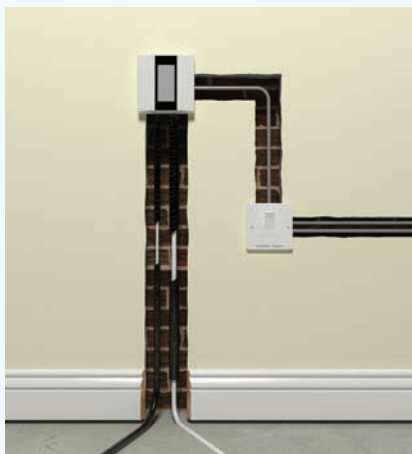
- Heating mats(s) with 3mm twin-core, earth screened cable taped to glass fibre mesh
- SBR primer(s) 500ml
- Roller for application of primer
- Digital thermostat with floor temperature sensor and conduit housing
- Guarantee Certificate (*page 11 of this booklet*)

Installation Notes

- The system requires a mains voltage 230/240v & must be connected by a suitably qualified person (part P building regulations 2005). All wiring must conform to IEE Wiring Regulations.
- The system is intended for heating tiled or stone floors & the mat output/wattage is given on the box & label.
- The cable attached to the mat is double insulated & inside the first outer sheath (coloured black) there is an earth screen (the silver coloured braid). The cable also contains a built in return, meaning that the cable only has to be connected to the thermostat from one end. Within the earth screen there are 2 wires - one brown, one blue - these are the live & neutral.
- For larger areas, if two or more mats are supplied, these can usually be connected together at the thermostat or by using a small blank fronted connection box.
- The system is suitable for installing on any sub-floor which is sound & suitable for tiling. In General this will be concrete, plywood or cement faced tile-backer boards – some water resistant composite boards may also be suitable, but it is not recommended to tile directly onto hardboard, MDF or standard grade chipboard as these substances absorb moisture & subsequent swelling could cause tiles to crack or dislodge. Note - if installing on a newly finished concrete screed the required minimum drying out or 'curing' period should be allowed before installing.
- The electrical & electromagnetic fields generated are negligible & well within all recommended European & International guidelines.
- The mesh matting can be cut, but the Blue heater cable **MUST NOT** be cut, shortened or joined.

Electrical Provision

Before starting the installation you should make provision for the electrical connections, for smaller areas this should be possible by means of a fused spur or combined RCD spur from an existing circuit - **see below**. However for larger areas a separate circuit from the distribution board is recommended – you should always consult with your electrician concerning your specific requirements.



Note - if installing in a bathroom or other 'wet' room the thermostat must be located OUTSIDE of the room on the opposite side of the wall, for example in a bedroom or hallway/landing.

Preparation

Ensure that the sub-floor is solid & suitable for tiling, free from dust & debris. Wood flooring with more than 30cms between the joists should ideally be reinforced to prevent flexing & the possibility of tiles dislodging. Wood flooring can be reinforced using **18mm WBP plywood** or load-bearing insulation boards such as Marmox.

Insulation

The insulation levels of a floor will affect both the performance & running costs of an underfloor heating system & adequate insulation is recommended wherever possible. It would not generally be considered necessary to insulate small areas where the requirement is simply to 'take the chill off the floor', however in cases where the heating is being installed over large areas, particularly as the primary heating source in a ground floor room or conservatory, insulation boards will greatly reduce warm-up times & running costs. Suitable insulation boards are such as Marmox or Blueboard available from your supplier.

Important Notes: The system **MUST** incorporate a 30mA RCD protection either at the distribution board or by replacing the fused spur with a combined fused spur/RCD.

The blue heater cable **MUST NOT** be cut or altered at any point – only the mesh, black 'cold' cable & the floor temperature probe can be cut. The joint between the blue heater cable & the black cold cable **MUST** be located under the floor. The Cold tail connection **MUST NOT** be bent.

For larger areas a separate circuit will be required – always consult your electrician concerning your individual requirements.

The thermostat has a rating of 16 amps – loads in excess of 16 amps (3.6kw approx) will need to be connected via a suitable switched contactor – consult your electrician on this.

The thermostat **MUST NOT** be located in a bathroom.

Installation

Step 1

First prepare the sub-floor ensuring that it is clean & free from grease, dirt or debris. Note - if installing on a bitumen base, this must either be removed or covered with a suitable insulation board before proceeding. The most suitable sub-floors are: concrete, tile-backer boards, existing tiles, water-resistant timber e.g. WBP Ply.

Step 2

If fixing tile-backer boards, do so in accordance with the separate instructions provided, using tile adhesive on a concrete sub-floor & galvanised screws with washers/fixings on timber sub-floors.

Step 3

Prime the floor using the SBR primer contained in the kit. If installing over a large area or on an absorbent surface, the primer may need to be diluted with water to a maximum of two parts water to one part primer. Leave the primer to dry (**typically 3-8 hours**). Once primed avoid any foot traffic over this area. The purpose of priming is to promote greater adhesion of the mat and reduce the amount of moisture absorbed into the sub-floor.

Step 4

If possible test the mat before laying, using a multi-meter to ensure that the resistance is as per that given on the mat. If you do not have a multi-meter you may proceed & lay the mat but **DO NOT** tile over without first testing it. (See Step 10)

Step 5

Plan the mat layout

This is a very important step & **MUST** be done correctly to ensure all the mat is used up. **Once the mat has been unrolled and or cut the mat cannot be returned.** First measure the area to be heated in m² (do not include the area taken up by fixed objects such as baths/showers & kitchen units). If the heated area is smaller than the chosen mat size **STOP** & return or exchange for the correct size.

The mat width is 50cm & you should mark out the layout plan on a drawing. Blue heating cable can be removed from glass fibre mesh to run in to awkward areas, round obstacles or back to Thermostat position.

Step 6

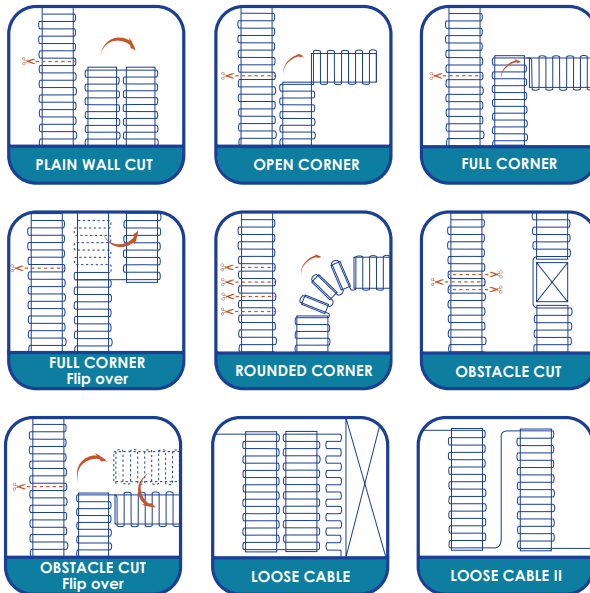
Only when you have calculated that the mat will fit into the room should you begin to lay. Beginning at the corner closest to where you have located the thermostat, position the mat ready to start rolling out. **Important** - before rolling out check that the black cold lead will reach the location of the thermostat. If it does not you should either change the starting point, or cut a thin strip of mesh either side of the cable & run this along the edge of the room back to the thermostat. The joint between the black 'cold' cable & blue heater cable must be located under the tiles and this connector must not be bent.

Step 7

From the start point roll out the mat with the, mats are **reversible** so can be laid either way up.

When you reach the opposite end of the room cut through the mesh - **DO NOT CUT THE CABLE** - turn the mat through 180 degrees & roll back the other way. Continue this process until all of the mat is used up. If you are using two or more mats try to finish off at the opposite wall so that the second mat is easier to lay.

Please ensure that the mat is only installed in the 'free floor area' and is NOT routed below any fixed objects or drains. Note – the joint between the black 'cold' cable & the blue 'heater' cable MUST be located under the floor.



Step 8

With the mat in position, remove the covering from the double sided tape and adhere to the primed floor.

Step 9

Fit floor sensor

Position the sensor between two runs of mat & tape into position, a groove will be required to enable the housing conduit to sit flush with the heating cables. The sensor wire can be shortened or lengthened, but if you do need to shorten it only cut the end containing the wires. **DO NOT** cut the end which contains the plastic sensor. The connections to the thermostat can now be made – but **DO NOT** turn the system on until it has been tiled. (See separate instructions with thermostat)

Step 10

Test the mats resistance again using a multi-meter. If you do not have access to a multi-meter, you may fit a fused plug & plug the system into a socket **'for a few minutes'** to ensure that the cable starts to heat up. **DO NOT leave the mat plugged in for more than 5 minutes & UNDER NO CIRCUMSTANCES should you plug the system in when the mats are rolled up.**

Step 11

Finally tile the floor using a flexible tile adhesive & grout as per industry standards & the manufacturer's instructions. Wait at least **ONE WEEK** before turning the heating system on to allow the adhesive time to dry. If you are using a suitable vinyl or thin carpet as the final flooring, you will need to cover the mat with a suitable latex levelling compound - we recommend a minimum of a 6mm covering over the cables to ensure even heat distribution.

NOTE – The heating may be slow to react at first, especially if installed on a new screed floor or in a new building – start by setting the floor temperature at around 20-22° C & build up by 1 degree per day until your desired temperature is reached. Please see separate instructions for connection & operation of the digital thermostat.



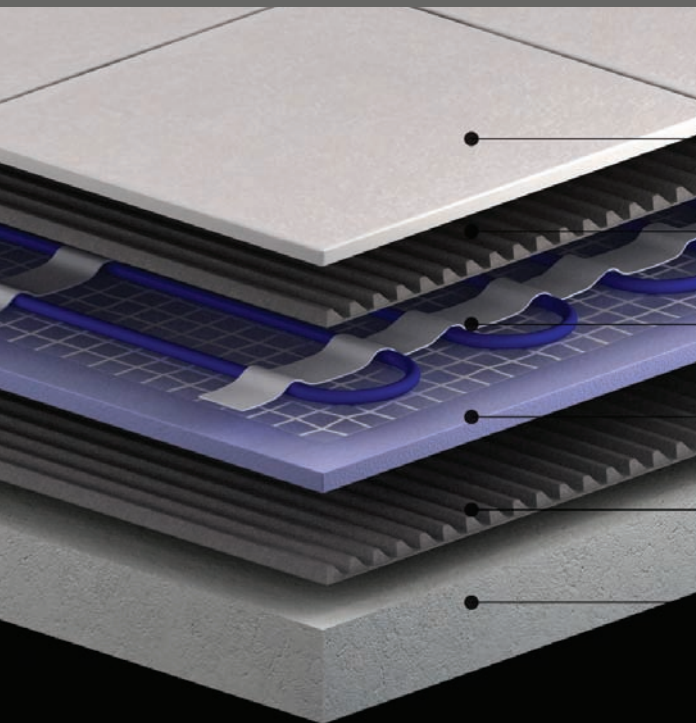
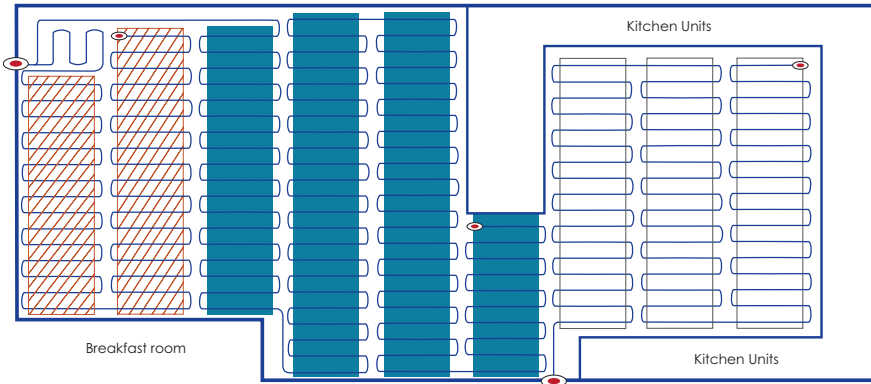
5m pack



10m pack



7m pack



Tiled floor

Adhesive

Heating mat

Insulation

Adhesive

Floor base

Do's & Dont's

DO

- Fully embed the heating cable
- Read through these instructions carefully before beginning work
- Use flexible adhesives & grouts
- Test the cable **BEFORE** and **AFTER** tiling
- Be careful not to damage or dislodge the cable during tiling
- Try to protect the cable with cardboard or carpet during tiling
- Wait at least 7 days before turning on the system
- Read the separate installation & operating instructions for the thermostat
- Ensure that the joint between the Black & Blue cable is fully embedded beneath the tiles

DON'T

- Attempt to cut the blue heater cable at any point
- Allow the wires to cross or touch
- Allow foot traffic over the wire before tiling
- Cut tiles directly over the cable
- Place tools or stacks of tiles on top of the cable

DO

Contact your supplier if you need assistance.



Resistance Table – Under tile mats by Thermopads

UNDER TILE MATS 100W/M² - (HML) BY THERMOPADS

Watts (power)	Length (Meters)	Resistance (ohms)
100	2	529
150	3	352
200	4	264
250	5	211
300	6	176
350	7	151
400	8	132
450	8	118
500	10	105
600	12	88
700	14	75
800	16	66
900	18	59
1000	20	53
1100	22	48
1200	24	44

UNDER TILE MATS 150W/M² – (TPM) BY THERMOPADS

Watts (power)	Length (Meters)	Resistance (ohms)
150	2	352
225	3	235
300	4	176
375	5	141
450	6	117
525	7	100
600	8	88
675	8	79
750	10	70
900	12	59
1050	14	50
1200	16	44
1350	18	39
1500	20	35
1650	22	32
1800	24	29

FLOOR TEMPERATURE PROBE

Resistance (ohms)
16k @ 15°C - to - 12k @ 20°C

Technical Support

Tel: 01799 524730

Email: info@ambient-ufh.co.uk

Resistance Table – Under tile mats by Thermopads

UNDER TILE MATS 200W/M² – (HMH) BY THERMOPADS

Watts (power)	Length (Meters)	Resistance (ohms)
200	2	264
300	3	176
400	4	132
500	5	105
600	6	88
700	7	75
800	8	66
900	8	59
1000	10	53
1200	12	44
1400	14	38
1600	16	33
1800	18	30
2000	20	26
2200	22	24
2400	24	22

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FLOOR TEMPERATURE PROBE

Resistance (ohms)
16k @ 15°C - to - 12k @ 20°C

Guarantee Certificate – Ambient Electrical Ltd.

Under Tile Cables, Mats, in Screed Systems & Thermolam

This guarantee is only valid if installed by an IEE 17th Edition qualified electrician/electrical contractor. This installation must conform to Part P of the building regulations 2005.

In order to validate the guarantee the resistance values & signature of the installer must be completed. A currently calibrated piece of test equipment must be used.

The guarantee covers reported manufacturing defects within the heating cable for the life time of your floor finish or 15 years whichever is the sooner; programmable thermostats and floor sensors are covered for a period of two years from date of original invoice.

Faulty components covered by this guarantee are repaired or replaced at our discretion, where repair or re-placement is not practical a refund of original purchase price may be offered. Other costs such as replace-ment or repair of flooring materials are not covered by this guarantee.

The guarantee is not invalid if faults are caused by damage attributable to incorrect installation, misuse or mechanical damage such as drilling or puncturing the floor.

Please retain this guarantee along with your original purchase invoice.

Test Report

PRODUCT	WATTAGE	RESISTANCE BEFORE FITTING	RESISITANCE AFTER FITTING	INSULATION RESISTANCE 500v PN-E
Mat / Cable 1.				
Mat / Cable 2.				
Mat / Cable 3.				
Mat / Cable 4.				
Mat / Cable 5.				
Mat / Cable 6.				

Customer Name:

Customer Address:

.....

Electrical installation by:

Serial number of calibrated test equipment:

Underfloor Heating installation by:

Date Signature



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