

HEATING MAT INSTALLATION GUIDE

Installation Advice

- Use scissors when cutting the backing mesh.
- Never cut the cable.
- Ensure floor is clean, dry and free from sharp objects before laying mat.
- The cable is extremely tough but care should be taken when installing near sharp objects.
- Always use a plastic trowel and never store objects on the mat during installation.
- Avoid unnecessary foot traffic over unprotected matting
- A flexible tile adhesive is required when tiling over underfloor heating.
- Check the continuity and resistance of the floor mat cable before, during and after installation.
- Allow a sufficient drying period for the subfloor or finished floor surface before turning on the heating system.
- DO NOT tape over the coldtail joint. It must be fully embedded in tile adhesive or levelling compound.

Pre-Installation Check List

Products:

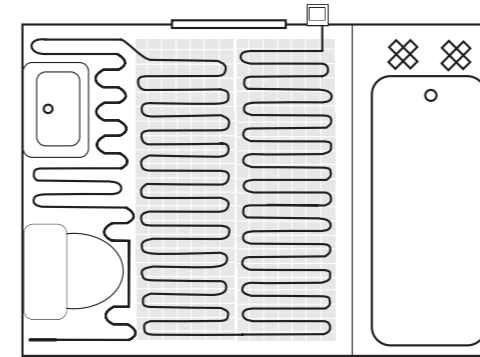
- Heating Cable Mat – ensure correct size before unrolling
- Thermostat (inc. floor sensor + sensor conduit)
- Insulation Boards (if required)
- RCD 30mA (Residual Current Device) if not already fitted

Tools:

- Multi-meter for checking continuity and resistance
- Measuring tape and marker pen
- Scissors

Step 2: Planning

Plan your installation using a sketch, marking your laying pattern and the positions for the thermostat and floor limit sensor. Calculate the free floor space that you want heated. You cannot install the matting under floor fitted furniture (baths, WC or cabinets). It is important that you calculate accurately the size of mat or combination of mats your require. The mats cannot be reduced in size so always undersize the calculated free floor area by 10-15% before selecting the correct mat(s). Additional mats should be wired in parallel using a suitable junction box.



Notes:

For hard to reach areas the cable can be detached from the mesh and be installed as loose cable using adhesive tape to secure to floor. Do not install the thermostat on an interior bathroom wall.

Step 4: Lay the Thermal Insulation

The floor should be level and dust free. New concrete screeds should be well cured and wood floor boards should be well secured with screw fixings to prevent movement. Insulation boards should be laid onto a suitable flexible tile adhesive which has been applied with a notched trowel. Lay boards in a staggered pattern as shown below. Boards should be thoroughly bedded ensuring no air pockets remain. Joints can be taped with a fibreglass reinforcing tape.



Step 5: Testing of the Heating Mat

It is important to test the resistance of the heating mat using a multi-meter before, during and after installation. These readings should be checked against the label valve.



If there is any variation outwith the tolerance of -5%/+10% , stop immediately and call the technical helpline.

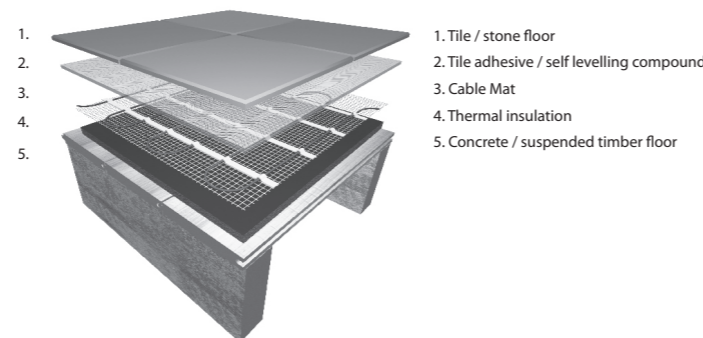
Installation Advice

- All electrical wiring must be carried out by a fully qualified Electrician in accordance with the current IEE wiring regulations.
- The installation must be protected by a 30mA RCD for safe operation (not included).
- Plan your installation carefully. Always under estimate the amount of matting required by 10-15% as the mat cannot be cut or reduced in size.
- Example: If area of floor to be heated is 3.5m² select a 3.0m² mat.
- The heating cable must not touch, cross or overlap itself at any point. Ensure a min. gap between cables of 50mm.
- Consider thermal insulation boards to improve heating efficiency and heat up times, especially on concrete subfloor. These boards are usually available in 6mm & 10mm thicknesses.
- On suspended wooden floors always overboard the floor with a surface suitable for tiling. Either tile backer board or WBP plywood.
- Do not install the mat directly under permanent fixtures (baths, toilet etc), under carpet or other non-masonry flooring.
- The cold lead is 3m long. It can be cut/extended to suit the location of the mains power connection box.
- The thermostat floor sensor should be located centrally between 2 cable loops under the mat approx 500mm into the heated floor.

Step 1: Floor Instructions

Concrete Subfloors: The insulation level of your subfloor will effect the performance and running costs of your floor heating system. For optimum performance it is recommended that an insulated tile backer board is installed on a concrete subfloor before laying the cable mat. This will minimise heat losses to the subfloor, reducing heat up times and running costs. The mat can be laid directly onto an uninsulated concrete floors, however it is not recommended.

Wooden subfloors: Should be reinforced and stabilised to prevent flexing and dislodging of tiles. Overboard timber floor boards or chipboard with a surface suitable for tiling as a rigid base is essential. Either tile backer board or WBP plywood fixed securely.



Step 3: Heating Control

The floor heating mat must be controlled by a thermostat with a floor limit sensor. Choices range from a sophisticated timer/ thermostat with LCD that can be programmed for convenience to a simple manual thermostat with temperature dial adjustment and on/off selection.

Whatever type you have chosen to install, the thermostat should be installed within the room to be heated.

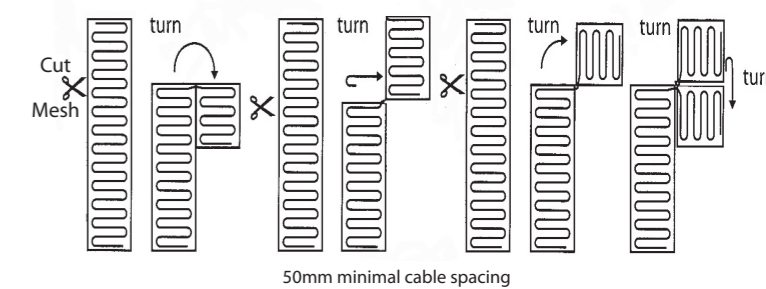
For bathrooms or shower rooms, the thermostats must be placed outside the room but as close to the installation as possible. Control of the heated floor in this application is provided by the floor sensor only.

Refer to the thermostat instructions for installation and technical information.



Step 6: Lay the Mat

Identify the start point from your plan recognising the 3 metre cold tail and the position of the thermostat and junction box. Do NOT tape over the cold tail joint. It must be fully embedded within the tile adhesive or levelling compound. Unroll the matting. When the end of a run has been reached, simply cut the backing mesh with the scissors, turn the matting in the required direction and continue unrolling. The matting should have a minimum perimeter clearance of 50mm from walls or floor mounted furniture. Cable spacing between loops should NOT be less than 50mm.



Stick the mat down

When satisfied with the layout pattern stick the matting to the floor by removing the backing paper from the integral adhesive fixing strips and pressing firmly to the floor.

It is important to ensure that the matting is firmly secured to the subfloor especially near the edge of the mat and where loose sections which have been caused by flipping or turning.

Step 6: Lay the Mat (cont.)

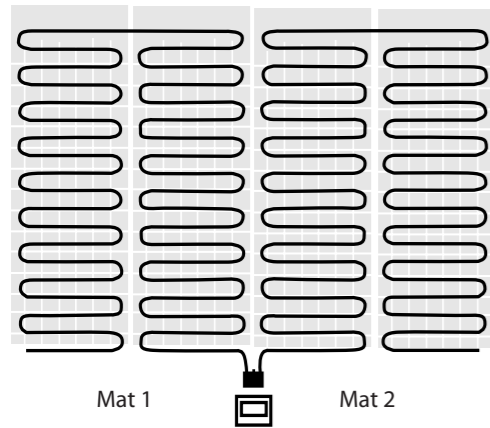
This will avoid loose mesh material which is more difficult to cover with adhesive or self levelling compound.

Additional fixing methods that can be used are:

1. Adhesive tape
2. Hot glue gun
3. Staple gun, if fitting to a plywood or tile backer board floor, never staple to the heating cable, only to the backing mesh.

Joining Multiple Mats.

If your floor area is larger than the largest mat available. It is possible to use multiple mats by wiring them in parallel. (Example: a calculated heating area of 17m² would require 10m² + 7m² mats). Please ensure if joining large mats in parallel the load rating of the thermostat is not exceeded. Consult your electrician.



Step 8: Complete Your Installation

Using Tile Adhesive:

Working with a width of a mat at a time, apply a layer of flexible tile adhesive, with a rubber backed trowel, so that the cable is completely covered with no air pockets or voids. Once dry, a second layer of adhesive can be applied using a notched plastic trowel to comb the adhesive before laying the tiles. Care should be taken at all times if using sharp tools near the cable to prevent damage.

Using Self Levelling Compound:

This method provides a smooth surface to tile on while protecting the heating cable when tiling. It is the recommended method for all but the smallest installation.

A flexible self levelling compound that is suitable for under-floor heating must be used. Mix the compound and pour the self levelling compound over the cable mat to a depth that the cable is completely covered with no air pockets or voids. Allow to completely dry before laying tiles using a flexible tile adhesive suitable for underfloor heating.

Wiring up (Electrician only)

A fully qualified electrician must now make the final connections to the mains supply and install the thermostat.

The electrician should check for continuity of the floor sensor and retest the resistance of the cable. This reading should be recorded on the record sheet.

Technical Information

Area	150W/M ²		
to be heated m ²	Output (w)	Length (m)	Resistance (ohms)
1.0	150	2	353
1.5	225	3	235
2.0	300	4	176
2.5	375	5	141
3.0	450	6	118
4.0	600	8	88
5.0	750	10	71
6.0	900	12	59
7.0	1050	14	50
8.0	1200	16	44
9.0	1350	18	39
10.0	1500	20	35
11.0	1650	22	32
12.0	1800	24	29

Contact Information

Please contact us if you have any problems with the installation of your heating mat.

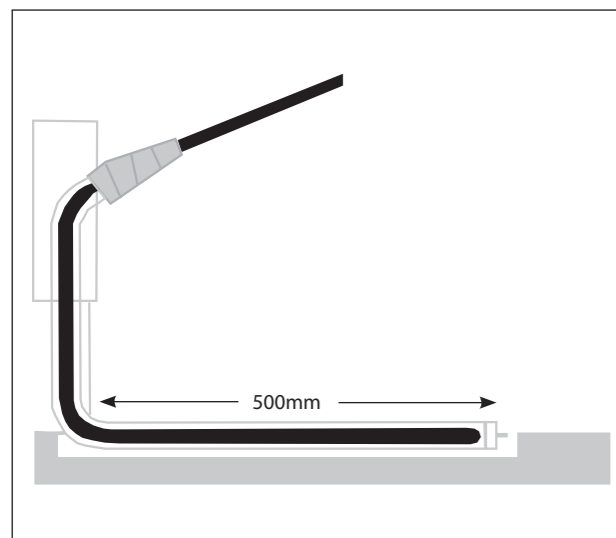
Technical helpline: 0330 134 4739

Email: sales@ultrawarm.com

For information about our products visit our website at www.ultrawarm.com

Step 7: Install the Floor Sensor

Install the floor sensor by threading into the protective conduit supplied. Tape the end of the conduit to prevent adhesive entering. Conduit should be positioned between 2 cable loops approximately 500mm into the heated floor. Ensure that you have sufficient sensor cable to stretch back to your low level junction box. Avoid crossing over any of the heating cable. You will need to create a groove in the floor to recess the conduit below the mesh of the mat.



Step 8: Complete Your Installation

Guarantee Certificate

Following installation, the Guarantee certificate should be fully completed. This should include a sketch plan of the mat layout and position of the floor sensor. The Guarantee certificate together with the purchase receipt should be permanently fixed near the consumer unit.

Switching On Important:

- Do not turn on the heating system until the tile adhesive has fully cured. Using the heating system to accelerate the adhesive drying process could have a detrimental effect. Consult the adhesive manufacturer's instructions for a suitable drying out period.

FAQ's

Q: Can I cut the cable and reduce the size of the mat?

A: No the cable mat cannot be shortened. The cable must not be cut. It is important to buy the correct mat size for the area you want heated. Check all floor dimensions before commencing laying the mat. If the mat is obviously too big for the area return it to the wholesaler to exchange it for the correct size.

Q: Can I install the heating mat myself?

A: Heating mats are easy to install by following these simple instructions. Only the final connection to the mains supply must be carried out by a suitably qualified electrician.

Q: Can I heat a laminate or engineered board floor using a cable mat?

A: Yes you can, but the mat must be covered with a minimum layer of 10mm latex type floor levelling screed. This screed acts as a heat dispersion layer.

Q: Can I use the underfloor heating as the sole source of heating in my room?

A: If you are considering using the heating mat(s) as the sole source of heating in a room you need to ensure that you allow sufficient heat input to cover the heat losses. Take advice from your Architect or Heating Engineer to calculate the heat input required.