

## Aluminium Foil Heating Mat INSTALLATION GUIDE

### Installation Advice

- Do not install the mat directly under permanent fixtures (baths, toilets, fitted cabinets etc).
- The cold lead is 3m long. It can be cut/extended to suit the location of the mains power connection box.
- The thermostat floor limit sensor should be located centrally between 2 cable loops under the foil mat.
- During installation, you may need to cut and turn the mat to fit the room. It is imperative that you never cut, twist or kink the encapsulated heating cable.
- Use scissors, to provide more control, when cutting the aluminium foil mat.
- Ensure floor is clean, dry and free from sharp objects before laying foil mat and insulation material.
- Avoid unnecessary foot traffic over unprotected matting
- Check the continuity and resistance of the foil matting before, during and after installation.

#### Pre-Installation Check List

##### Products:

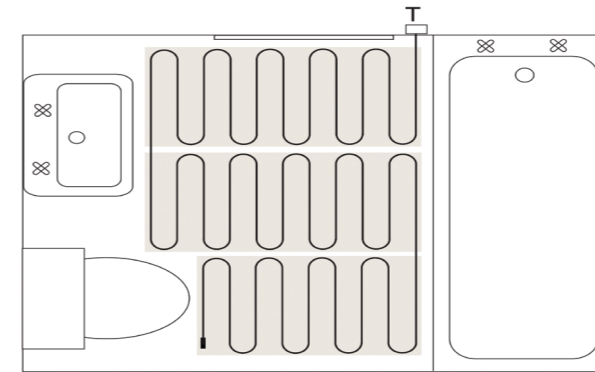
- Aluminium Foil Heating Mat – ensure correct size before unrolling
- Thermostat (inc. floor sensor + sensor conduit)
- Aluminium Fixing Tape
- Soft Insulation Boards & Adhesive Fixing Tape
- RCD 30mA (Residual Current Device) if not already fitted

##### Tools:

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

### Step 2: Planning

Plan your installation using a sketch, marking the layout pattern and the positions for the thermostat and floor limit sensor. Calculate the free floor space that you want heated. (free floor area = total floor area minus any permanent fixtures). 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 required. The mats cannot be reduced in size and the cable should not be stripped from the foil heating mat except to execute turns. Please also consider that there should be a minimum perimeter clearance left of 50mm in addition to a 30mm spacing between parallel cut sections of the matting. Additional mats should be wired in parallel using a suitable junction box.

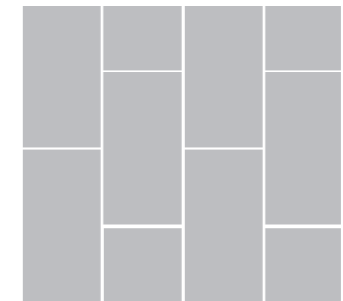


#### Notes:

Do not install the thermostat on an interior bathroom wall.

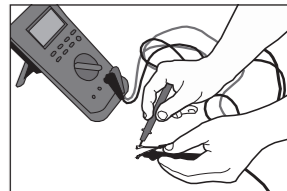
### Step 4: Lay the Thermal Insulation

The subfloor should be level and dust free. A suitable soft insulation board should be laid in a staggered pattern as shown below. Secure the insulation boards by taping the edges together



### Step 5: Testing of the Heating Mat

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



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

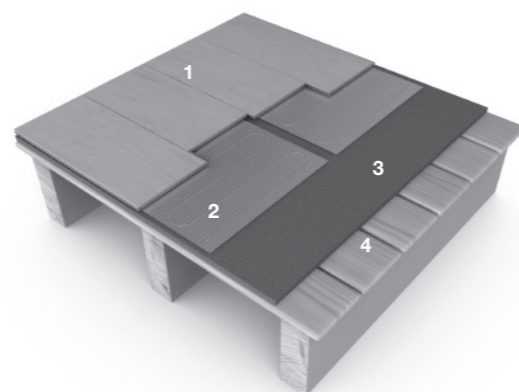
### Installation Advice

- 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).
- This foil heating mat is intended for use with floating laminate or timber floor coverings. It should not be installed under tile or stone floors as it is unsuitable for use with cement adhesives or screed materials.
- Install the side marked "this side up" facing the floor covering.
- Do not install insulation or sound attenuation materials between the foil heating mat and the floor covering.
- Do not use with laminates or wood floors that use a metal clip locking system.
- After fitting the mat, use the aluminium tape provided to cover the exposed wire and link the pieces of the mat.
- Plan your installation carefully. Always under estimate the amount of matting required as the mat cannot be cut or reduced in size and the cable should not be stripped from the foil heating mat except to execute turns in the layout pattern. This planning is especially important in irregular floor spaces with floor mounted obstructions to negotiate.
- The foil mat must not cross or overlap itself at any point.
- The foil mat should not be installed directly on top of timber or concrete subfloors. A suitable soft insulation material should be used to improve heating efficiency and heat up times.
- Do not use cellulose insulation.

### Step 1: Floor Instructions

**Concrete Subfloors:** The insulation level of your subfloor will effect the performance and running costs of your floor heating system. Do not install the foil heating mat directly onto a concrete floor slab. The mat must be installed on top of a suitable soft insulation board. This will minimise heat losses to the subfloor, reducing heat up times and running costs.

**Wooden subfloors:** Should be reinforced and stabilised to provide a rigid base. Ensure the subfloor is clean and free from any sharp objects. Lay the soft insulation boards in "brick work" fashion covering the whole floor including unheated areas.



1. Laminate / wood floor
2. Foil Heating Mat
3. Soft thermal insulation
4. Concrete / timber floor

### Step 3: Heating Control

The foil heating mat must be controlled by a thermostat with a floor limit sensor. Choices range from a sophisticated timer/ thermostat 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.



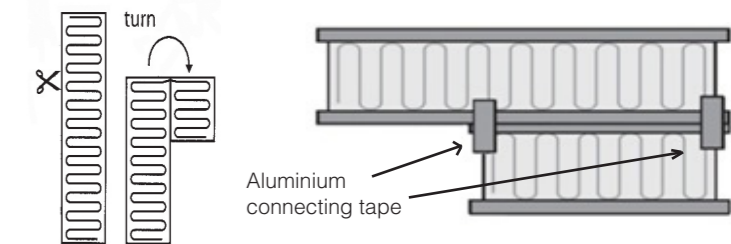
Manual



Programmable

### 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. Unroll the matting. When the end of a run has been reached, turn the mat over so that the cable loops are exposed. Cut the backing foil, between 2 cable loops with scissors ensuring you do not cut the clear heating cables. Turn the matting in the required direction and continue unrolling. It is important that the exposed cable at each turn should be covered with the supplied special aluminium tape to link the mats together. This is essential to keep the earth circuit intact. There should be a minimum clearance of 50mm from walls or floor mounted furniture. Leave a minimum 30mm spacing between cut sections of the matting.

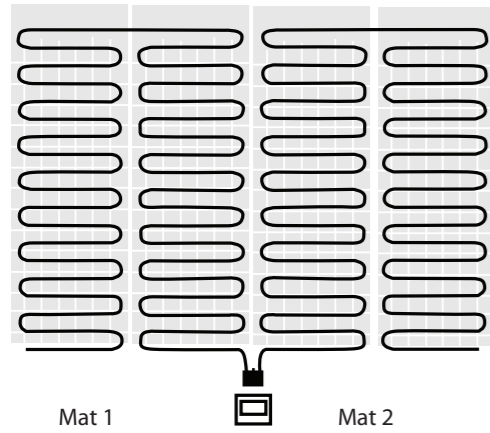


#### Stick the mat down

When satisfied with the layout pattern and after the exposed cable at each turn has been covered with the special aluminium connecting tape, stick the matting to the floor using the aluminium tape (ALU50) available as an accessory. This tape should also be used to bridge the gap between cut sections of the foil matting. (Note: Please see step 7 regarding floor sensor position)

## Step 6: Lay the Mat (cont.)

**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  $12\text{m}^2$ , after allowances, would require  $10\text{m}^2 + 2\text{m}^2$  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

**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 re-check the resistance of the foil heating mat. This reading should be recorded on the guarantee sheet. The resistance of the thermostat floor limit sensor should also be checked to ensure it is within specification.

### Guarantee Certificate

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

## FAQ's

**Q: Can I reduce the size of the mat?**  
**A:** No the foil mat cannot be shortened. 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:** Foil 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 install the foil heating mat directly on top of a subfloor?**  
**A:** No. The mat must be installed on top of a soft insulation like Ecomax-Lite. This is to prevent damage to the mat when the weight of the floor furniture and people are added.

**Q: Can I use the underfloor heating as the sole source of heating in my room?**  
**A:** If you are considering using the foil 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.

## Contact Information

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

Technical helpline: 01592 760 928

Fax: 01592 760 929

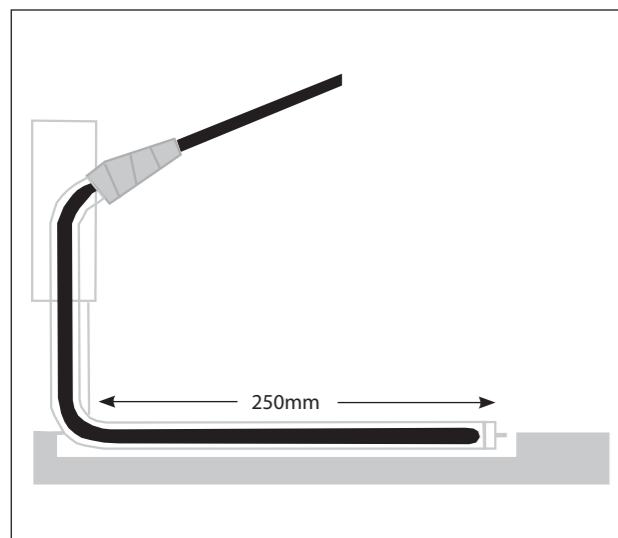
**Email: [enquiries@flexel.co.uk](mailto:enquiries@flexel.co.uk)**

Address: Queensway Industrial Estate,  
 Glenrothes, Fife, KY7 5QF

For information about our products visit  
**our website at [www.flexel.co.uk](http://www.flexel.co.uk)**

## Step 7: Install the Floor Sensor

Install the floor sensor by threading into the protective conduit supplied. Conduit should be positioned under the foil heating matting between 2 cable loops a minimum of 250mm into the heated floor. Ensure that you have sufficient sensor cable to stretch back to your low level junction box. Avoid crossing under any of the heating cable. You will need to create a groove in the floor to recess the conduit below the foil of the mat.



## Technical Information

Area to be heated m <sup>2</sup>	140W/M <sup>2</sup>		
	Output (w)	Length (m)	Resistance (ohms)
1.0	140	2.0	378
1.5	210	3.0	252
2.0	280	4.0	189
4.0	560	8.0	94
6.0	840	12.0	63
8.0	1120	16.0	47
10.0	1400	20.0	38

