

# BodenWärme



## Floor Heating

### Installation Manual

### Foil Heating

*For Wood & Laminate*

Technical advice available from Total Tiles:

Tel: 08444876548

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



**IMPORTANT - PLEASE READ INSTRUCTIONS  
FULLY BEFORE COMMENCING INSTALLATION**



**15**

**YEAR  
GUARANTEE**

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## WARNING

Ensure the instructions in this installation guide are followed carefully.

Failure to do so will invalidate your warranty.

Incorrect installation or mishandling of the product can cause damage to the heating cable and could cause fire or electrical shock hazards resulting in personal injuries or damage to property.

It is Important that this heating system is only installed by a competent installer. The installer should be familiar and capable of the proper sizing, installation, construction & operation of floor warming systems.

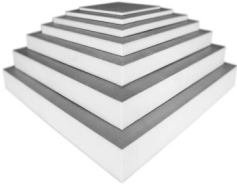
As with all electrical projects governed by Part P regulations, all mains electrical connections must be undertaken by a certified electrician.

These instructions should be used in conjunction with the installation instructions provided by the wood flooring manufacturer. In the event that there is any contradiction between them, contact Total Tiles for clarity on how to proceed.

**Total Tiles accept no liability, expressed or implied, for any loss or consequential damage suffered as a result of installations which in any way contravene the instructions that follow.**

## Materials required

### To prepare the floor ready for the heating mat



Insulation board for concrete floors



Soft underlay suitable for electric under-floor heating

### To measure & mark out the layout of the floor



Tape Measure

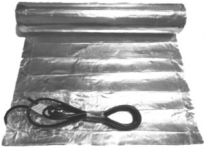


Marker Pen



Multi-meter to test heater(s) before installation

### To lay heater(s) and floor temperature sensor



Correct size heating mat



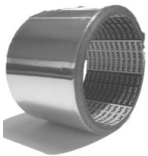
Floor temperature sensor



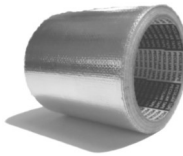
Flexible sensor & Sensor cable conduit



Multi-meter to test heater(s) & sensor during installation



25mm Aluminium foil tape for earth continuity



80mm Silver mat joint tape



Scissors to cut foil mat backing when turning the mat

### To Connect the heater(s)



BodenWärme Thermostat



Suitable back box for thermostat. Single gang 45mm depth



















30mA RCD protection for supply circuit



Meter to test heater & sensor after 3 fitting

## Important Information

# DO





















-  Do check the manufacturers instructions for your flooring and underlay to ensure it is suitable to use with electric underfloor heating.
-  Do carefully read this instruction manual in full before commencing the installation.
-  Do contact us or a trained professional if you are unsure about any part of the installation before installing.
-  Do test the heating system before, during and after installation.
-  Do ensure the floor has been adequately levelled, prepared and insulated. Check the floor has no protruding objects such as nail heads.
-  Do use the 50mm aluminium foil tape to join the mat between sections which are cut to turn. This is important to keep earth continuity.
-  Do maintain a minimum gap between each heating wire of 50mm (2inches.)
-  Do protect the circuit supplying the heater(s) with a 30mA RCD.
-  Do ensure the end of the heat mat and the joint between the heat mat & the black cold wire are both installed under the laminate / wood flooring.
-  Do ensure the heating elements are installed a minimum of 50mm away from conductive parts of the building, such as water pipes. No metal objects such as transition strips or metal edged locking laminate should come into contact with the foil.
-  Do take particular care when installing the flooring not to damage the heating cable. This includes ensuring no sharp edges such as metal edged laminate locking systems coming into contact with the foil heating. Take care when cutting the foil not to accidentally cut the cable. Only use scissors to cut the foil, do not use a knife.
-  Draw a plan of where the heating mat is situated to avoid causing damage to the wire by any drilling after fitting the floor (e.g. fixing of sanitary ware.) Photos are recommended.
-  Do avoid walking on heating during installation. If this is not possible protect the heating with thick cardboard.
-  Do ensure all electrical connections are made by a certified electrician and all work complies with current IEE wiring regulations.
-  Do use a Boden Wärme thermostat to control the heating using the FLOOR SENSOR ONLY. Ensure that the temperature set does not exceed the maximum recommended temperature. This is normally around 27°C
-  Do use a separate thermostat for each room where foil heating is installed. This will ensure accurate temperature control and energy savings.

### IMPORTANT!—Avoid thermal blocks

Thermal blocks are caused when an object is placed onto the floor that prevents the heat being transferred into the air. These can damage the item and / or flooring and heating.

Examples of items which can cause thermal blocks are solid based furniture, rubber backed rugs, floor cushions etc.

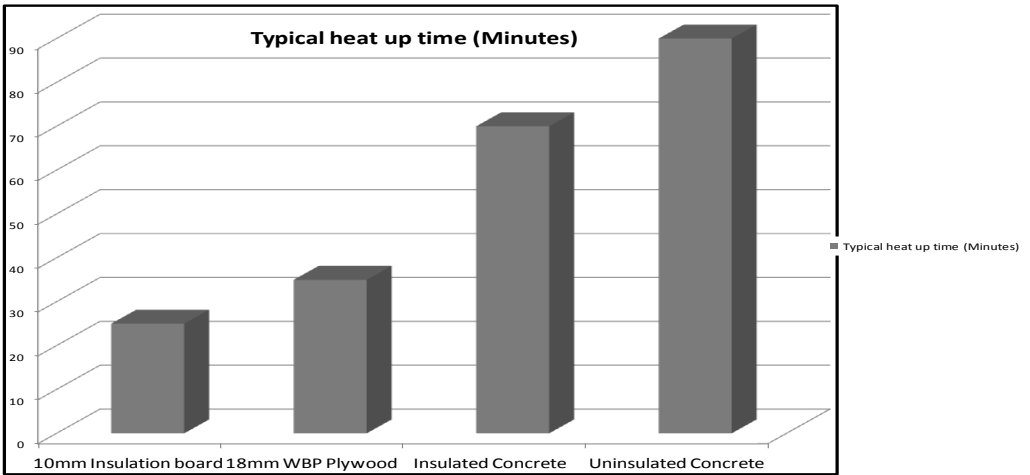
# DON'T

-  Don't install the heater(s) under any floor other than laminate or wood floors as recommended by the manufacturer.
-  Don't install the heating onto unsuitable floor surfaces such as non-recommended underlay or directly onto subfloors.
-  Don't cut or shorten the heating element at any time.
-  Don't leave any surplus heating under units or fixtures, the correct size **MUST** be used.
-  Don't install on any surface other than internal floors, such as walls or stairs.
-  Don't install without testing as detailed in this manual.
-  Don't overlap, fold or wrinkle the heating mats. Don't allow any cables to cross over at any point.
-  Don't connect more than one heater in series, only connect heaters in parallel.
-  Don't forget to install the floor temperature sensor. (Included in thermostat pack.)
-  Don't install in room temperatures of less than 5°C (40°F).
-  Don't place any heavy items on the foil heating during the installation (e.g. packs of wood).
-  Don't install the floor sensor close to any other heat sources or near doors or fixed items.
-  Don't leave items on the floor that will stop the flow of heat, such as bean bags or towels.
-  Don't install under fixed items such as furniture, unless a minimum of a 60mm free flowing air gap can be maintained.
-  Don't forget to use the aluminium foil tape for earth continuity.
-  Don't use laminates that have an underlay or cushioning material pre-installed to its underside or wooden floors thicker than 18mm.
-  Don't install the heating over floors that have traces of moisture, or existing carpets or parquet floor.
-  Don't install the foil mat within 100mm of a fireplace or hot water pipe.
-  Don't use cellulose insulation / underlay.
-  Don't install electrical cables or pipes under the floor with the foil heating mats.

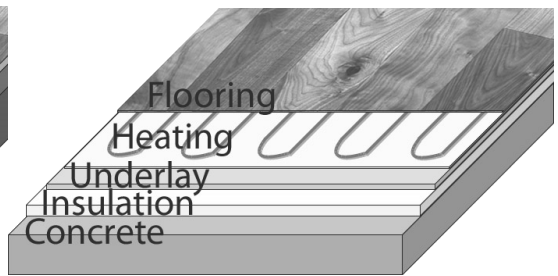
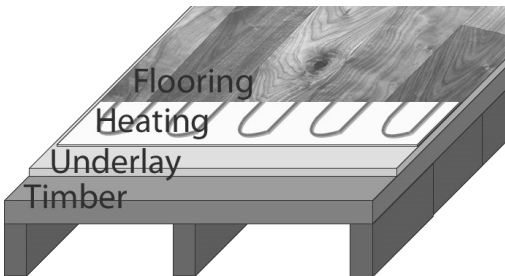
## Floor preparation & Insulation

When installing heating onto a uninsulated concrete floor, BodenWärme recommend the use of an insulation board. This board should be a good quality XPS sandwich board, suitable for electric underfloor heating. If using insulation board, the underlay layer is also still required. Insulation boards reduce heat up times considerably, as displayed below. They significantly reduce heat loss to a concrete subfloor and can reduce running costs by up to 50%

Heat up times will vary considerably depending on a number of factors including the material type and thickness of the flooring installed. The chart below is based on a 7mm laminate flooring installed with the recommended 3mm soft roll underlay



## Examples of floor layers



### IMPORTANT!

The heating **MUST** be installed directly under the flooring & on top of a soft suitable underlay.

Insulation boards should be installed in accordance with the manufacturers instructions.

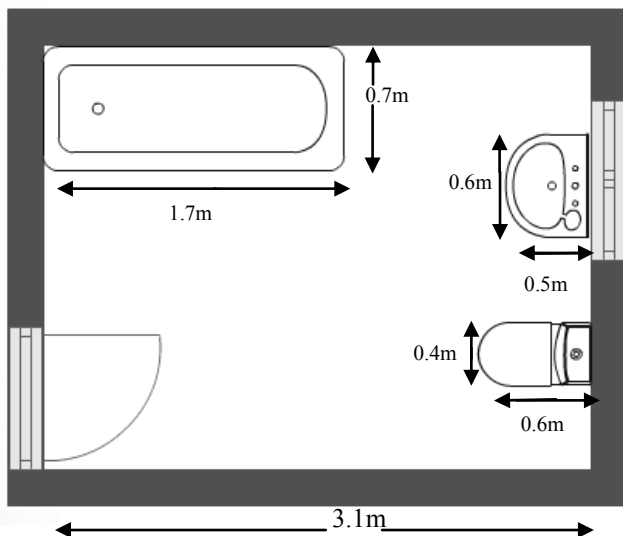
Where the foil heaters will be used as a primary heat source, a heat loss calculation must be carried out to ensure that the product will provide enough heat for the room.

## Planning your heat mat layout

### Heat mat size

Before starting to install your heating it is vital to ensure you have the correct size heating mat to suit your room. Once the foil of the heat mat has been cut, unfortunately it cannot be returned. The correct size mat is required as the wire **CANNOT** be reduced or extended.

### Example of calculating area to be heated:



$$\text{Total area: } 3.1 \times 2.4 \text{m} = \mathbf{7.44\text{m}^2}$$

Less areas not to be heated:

$$\text{Bath: } 1.7\text{m} \times 0.7\text{m} = 1.19\text{m}^2$$

$$\text{Sink: } 0.6\text{m} \times 0.5\text{m} = 0.3\text{m}^2$$

$$\text{Toilet: } 0.6\text{m} \times 0.4\text{m} = 0.24\text{m}^2$$

Total NON heated area:

$$1.19\text{m}^2 + 0.3\text{m}^2 + 0.24\text{m}^2 = \mathbf{1.73\text{m}^2}$$

Total area to be heated:

$$7.44\text{m}^2 - 1.73\text{m}^2 = \mathbf{5.73\text{m}^2}$$

$$\text{Then reduce by } 10\% = \mathbf{5.16\text{m}^2}$$

Always round down to nearest square meter:

$$\text{Heat mat required} - \mathbf{5\text{m}^2}$$

Heating should never be installed under fixed items such as showers or toilets as this can create hot spots which can damage the heating, fixed item and flooring. The total free area to be heated needs reducing by 10% to allow for the gaps between the mat edges, and the edges around the outside of the room.

It is always best to have a little less heating than some left over.

Decide on the position of the thermostat, this must be situated outside of a bathroom. The cold connection lead(s) of the heater(s) will normally start from this point. If more than one heating mat is to be controlled by one thermostat, these can be joined in parallel within a low level junction box.

When decided on this position (including the position of the mat), a groove should be cut into the floor to accommodate the floor sensor tube & the thicker cold end of the heating wire. A groove will also be required to accommodate the termination joint at the other end of the cable.

Before starting to fix the mat into position, with a permanent marker, mark out areas on the floor where units and fixtures will be fitted. Then mark out a plan on the floor of the positions & planned route of the mat(s) including where the mat will need to be turned.

## Testing the heater(s)

One of the most important steps to be taken when installing the mat, is the testing process. You must ensure that the mat is tested **BEFORE, DURING & AFTER** installation using a Multi-meter.

The resistance (Ohms) of each mat should be measured from the live (brown) wire to the neutral (blue) wire. Your multi-meter should be set to range of 0-2k  $\Omega$  (Ohms.) The measured value should then be checked against the table on the right. The value should be within -5% to +10%.

**If you get any different readings contact Total Tiles immediately on 08444876548 or email enquiries@totaltiles.co.uk**

The insulation resistance must also be checked. This should be checked with a digital insulation tester. The resistance should be tested between the live (brown) wire and the earth (unsheathed) wire and also between the neutral (blue) wire and the earth (unsheathed.)

Both should read >500M Ohms.

These insulation readings are required to be carried out as per BS7671.

The insulation resistance can also be checked (excluding final tests) with a digital multi-meter. The meter should be set to the highest resistance range. The reading should show Infinity / Open Circuit.

When checking resistance, make sure your hands do not touch the meter's probes as the measurement will include your internal body resistance making the reading inaccurate.

Both Resistance Tests & Insulation Resistance Tests should be carried out at the following stages. The results of which should be recorded on your warranty card.

1. Before the mat is laid to ensure it has not been damaged in transit.
2. After the mat is installed to ensure it has not been accidentally damaged whilst cutting the foil.
3. Mid way through installation of the flooring.
4. After the flooring has been installed

## Testing Earth Continuity

The foil mat carries the earth for the heating. It is imperative that several 10cm strips of the 50mm foil tape are applied between each mat section to ensure earth continuity.

**Earth continuity must be tested between the earth cable on the cold tail and the surface of the final section of the foil mat at the end of the installation.**

## Testing the floor sensor

The floor sensor should also be tested before, during & after fitting. This can be checked with a multi-meter set to a range of 0-200k  $\Omega$  (Ohm) The reading should be 9-25K Ohms.

**ALL TEST RESULTS MUST BE RECORDED ON P17 & P19**



# Heating Installation

## Heating mat resistance values

| Item Number         | Heated Area (M <sup>2</sup> ) | Mat Dimensions | Power Output (W) | Current (Amps) | Resistance (Ohms) |
|---------------------|-------------------------------|----------------|------------------|----------------|-------------------|
| AFMAT/140-140-1.0   | 1.0                           | 0.5m * 2m      | 140              | 0.6            | 377.9             |
| AFMAT/140-210-1.5   | 1.5                           | 0.5m * 3m      | 210              | 0.9            | 251.9             |
| AFMAT/140-280-2.0   | 2.0                           | 0.5m * 4m      | 280              | 1.2            | 188.9             |
| AFMAT/140-350-2.5   | 2.5                           | 0.5m * 5m      | 350              | 1.5            | 151.1             |
| AFMAT/140-420-3.0   | 3.0                           | 0.5m * 6m      | 420              | 1.8            | 126.0             |
| AFMAT/140-490-3.5   | 3.5                           | 0.5m * 7m      | 490              | 2.1            | 108.0             |
| AFMAT/140-560-4.0   | 4.0                           | 0.5m * 8m      | 560              | 2.4            | 94.5              |
| AFMAT/140-630-4.5   | 4.5                           | 0.5m * 9m      | 630              | 2.7            | 84.0              |
| AFMAT/140-700-5.0   | 5.0                           | 0.5m * 10m     | 700              | 3.0            | 75.6              |
| AFMAT/140-840-6.0   | 6.0                           | 0.5m * 12m     | 840              | 3.7            | 63.0              |
| AFMAT/140-980-7.0   | 7.0                           | 0.5m * 14m     | 980              | 4.3            | 54.0              |
| AFMAT/140-1120-8.0  | 8.0                           | 0.5m * 16m     | 1120             | 4.9            | 47.2              |
| AFMAT/140-1260-9.0  | 9.0                           | 0.5m * 18m     | 1260             | 5.5            | 42.0              |
| AFMAT/140-1400-10.0 | 10.0                          | 0.5m * 20m     | 1400             | 6.1            | 37.8              |
| AFMAT/140-1680-12.0 | 12.0                          | 0.5m * 24m     | 1680             | 7.3            | 31.5              |

## Heat Mat specifications

|                              |                                   |
|------------------------------|-----------------------------------|
| <b>Cable Construction</b>    | Dual Core Fluoropolymer Insulated |
| <b>Rated Voltage</b>         | 230V - 50Hz                       |
| <b>Output</b>                | 140w/m <sup>2</sup>               |
| <b>Cable Spacing</b>         | 50mm                              |
| <b>Cold Tail Length</b>      | 3m                                |
| <b>IP Rating (Mat Only)</b>  | IPX7                              |
| <b>Max Installation Temp</b> | 30°C (85°F)                       |
| <b>Min Installation Temp</b> | 5°C (40°F)                        |
| <b>Certification</b>         | CE, ROHS                          |

### DISPOSAL OF OBSOLETE APPLIANCES

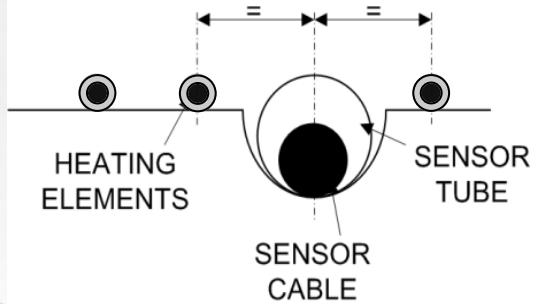
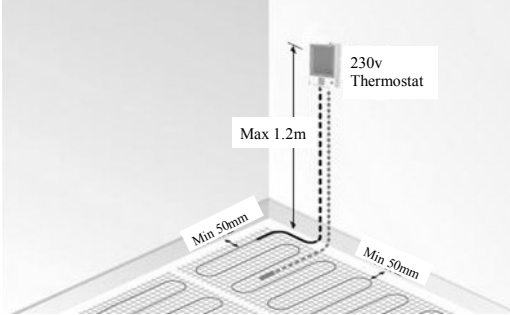
DO NOT dispose of this appliance in your general waste. Your local authority or retailer will be able to provide further guidance



## Heating Installation

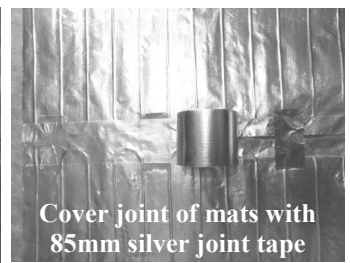
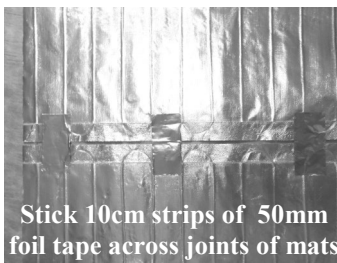
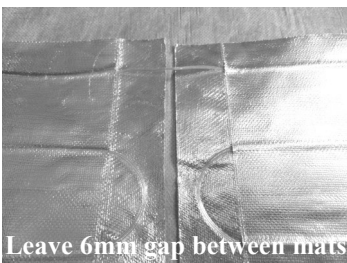
### Installation of the floor sensor

The floor sensor needs to be installed within a flexible conduit. The sensor should be situated 250-300mm away from the wall **and centred between two heating wires**. The sensor should also not be installed close to any other heat source, doors or fixed items. Ensure the sensor tube has a gradual bend when it enters floor level. This will ensure that if the sensor ever needs replacing, it can be easily inserted. Use duct tape to cover the end of the tube.



### Heating mat installation

Starting at the thermostat position, roll the mat out on top of the underlay following the plan made earlier. **The side with the exposed wire should be facing upwards.** When an obstacle such as a wall is met, cut the foil of the mat **TAKING CARE NOT TO CUT THE WIRE**, turn the mat, and begin rolling in the desired direction.



A gap of 50mm should be maintained between the heating and the edge of the room and 6mm gaps between each section of heat mat. Several strips of the 50mm aluminium foil tape should be adhered between each section of mat. Cover the length of the mat joints (Including tape strips) with the 85mm silver joint tape. **It is highly recommended to take photographs of the installed mat before installing the flooring**

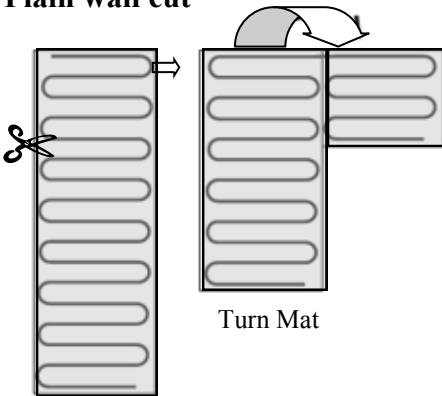
# Heating Installation

## Key considerations on heat mat layout

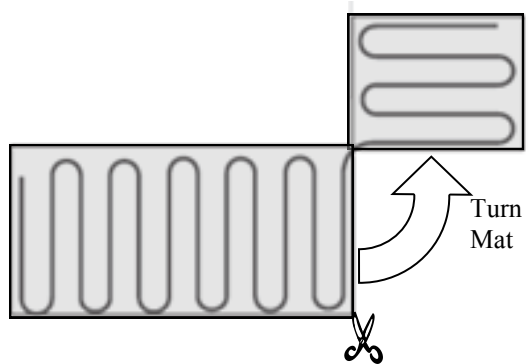
- Minimum distance between heating wires - 50mm
- Maximum distance between heating wires - 80mm (Any greater can cause cold spots)
- Distance between each section of the heating mat - 6mm
- Minimum distance between a heating wire and any object such as a pipe or wall - 50mm
- Ensure several strips of the aluminium foil tape are applied between mat sections.
- Do not install under fixed items unless a 60mm free flow air gap can be maintained.
- Do not cross any heating wires, including sensor wire.
- Ensure all mat joints including all exposed wires are covered with the 85mm joint tape.
- Ensure the sensor is installed dead centre between two heating wires.
- Ensure supply lead joint & termination joint are both situated under the flooring.
- Test the heat mat BEFORE laying the flooring.
- Contact Total Tiles immediately if any test results show an issue with the heater.

## Arrangements of the mat

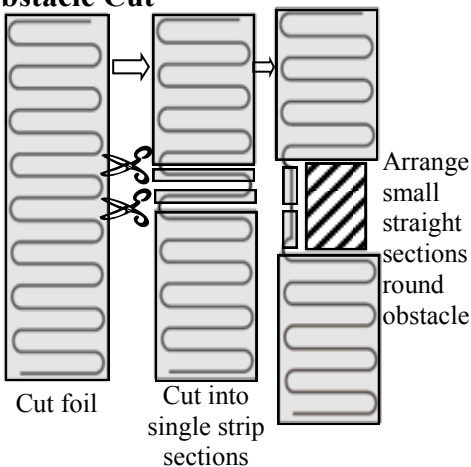
### Plain wall cut



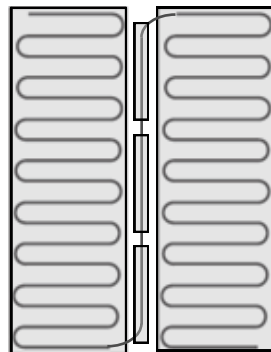
### Change of direction



### Obstacle Cut



### Single strips of mat moving to new area



## Flooring Installation

There are two main considerations when installing the flooring over the heat mat:

1. Ensure the foil mat is laid on top of a suitable soft insulating underlay. This is necessary to ensure that the heater isn't damaged when the flooring is in use with the additional weight of people and furniture being applied to the flooring.
2. Take care not to damage the heating when installing the flooring. Tools such as metal pull irons should not be used. Do not store the flooring or heavy objects on the mat whilst installing. Also do not cut the flooring on top of the heating mat.

### Suitable Underlay Materials

The underlay must be a minimum of 3mm thick and suitable for use with electric underfloor heating. The insulating properties of the underlay are important to reduce heat up times and increase efficiency. The higher the R value the better.

Take care not to select an underlay designed for warm water underfloor heating systems. These are designed with low insulation values as with these systems the heat needs to pass through the underlay.

If an insulation board is being used, an underlay must be installed on top as the hard surface of the insulation board will cause damage to the foil heating.

Under no circumstance should any cement based products such as self levelling products be applied to this foil heating system.

If a vapour barrier is to be installed it should be laid below the underlay layer.

### Suitable Wood / Laminates

Whilst most good quality laminate and engineered wooden floors are suitable for use with floor heating, check the manufacturers instructions of your flooring to ensure compatibility.

Laminate flooring with metal locking systems are not suitable.

The flooring selected should not have a thermal resistance exceeding  $0.15\text{m}^2\text{K/W}$ .

### Thermostat Connection

Once the flooring has been installed, the thermostat should be connected.

#### **IMPORTANT!**

**The thermostat MUST be set to use the floor temperature sensor only. The built in air temperature sensor MUST NOT be used.**

**The maximum temperature must be set according to the flooring manufacturers instructions. This is usually around  $27^{\circ}\text{C}$**

When the system is switched on, the temperature should be slowly raised over a number of days allowing the flooring to gradually acclimatise.

## Safety - Electrical Considerations

As with all electrical work governed by Part P regulations, all mains electrical connections must be undertaken by a certified electrician. All work must conform to current IEE Wiring Regulations.

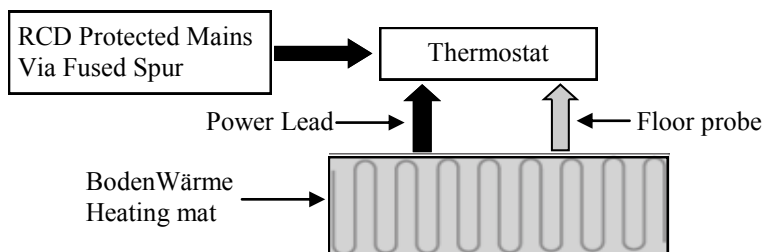
### Supply Circuit

- BodenWärme heating systems are designed for operation at 230V 50Hz.
- The heating system **MUST** be protected by a 30mA RCD (Residual Current Device) *This can be situated within the consumer unit or via a dedicated RCD fused spur.*
- Ensure the total current (Amps) of your heating system and other appliances connected to the circuit do not exceed the current capacity of the circuit. *Normal ring circuits are rated at 13A and loads within this rating can be taken via a single 13A fused spur.*
- The thermostat must be connected to the main electrical supply via a switched fused spur. The spur must have contact separation in all poles that will provide full disconnection under overvoltage category III conditions.

### Thermostat Connection

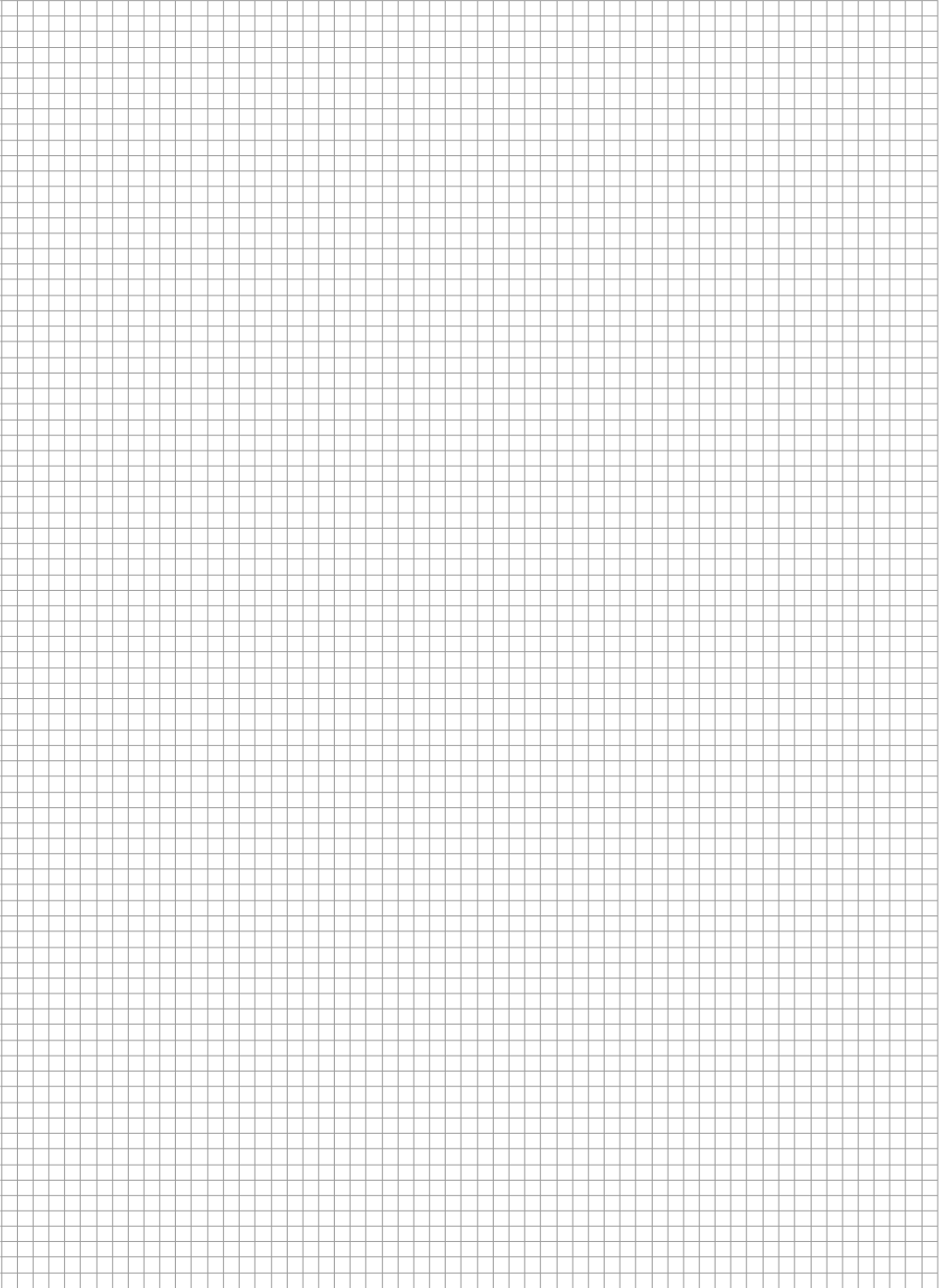
- BodenWärme thermostats have a rating of 16Amps. We recommend a maximum area of 24m<sup>2</sup> to be controlled by one thermostat. Any area greater than this should be split into separate zones (different heat mats) and controlled by more than one thermostat. Alternatively a contactor can be installed to switch the load.
- The thermostat should be installed within the room or area to be heated. **However**, the thermostat should be situated outside the room if the room contains a bath, shower, sauna hot-tub or swimming pool. In these cases the thermostat should be located on the outside of the heated rooms internal wall, as close as possible to the heating power supply cables.
- The wiring from the heater to the thermostat should be protected by conduit or plastic trunking. The thermostat should be installed in a 45mm depth back box.

### System Configuration



*If more than two heaters are being installed, a junction box will be required to connect the heaters with the thermostat*

**Ensure all earth leads are connected to the earth ring and that earth continuity to the foil surface of the last mat section has been tested.**



Attach Photo's Here

Attach Photo's Here

Attach Photo's Here

Attach Photo's Here

Attach Photo's Here

## Warranty

BodenWärme Foil Heating is guaranteed by Total Tiles Ltd to be free from defects in materials and workmanship under normal use and maintenance, for a period of 15 years subject to the limitations and conditions described below.

### **The warranty is valid assuming the following conditions are met:**

1. The heater is correctly installed according to the instructions laid out in this manual.
2. The heating system must be registered with Total Tiles Ltd within 60 days after purchase. The registration details can be found on the last page of this instruction manual. Original receipts / invoice should be kept as proof of purchase in case of a claim. Registration confirmation from Total Tiles will also be required.
3. The heater must be earthed and protected with a 30mA RCD & appropriate over current protection at all times.
4. The heater must be controlled by a BodenWärme approved thermostat & floor temperature sensor, installed according to the instructions included.  
(Thermostat's and floor sensors are guaranteed for a period of one year)

### **Total Tiles Ltd are NOT responsible for:**

1. Damage or repairs required as a consequence of faulty installation or application.
2. Consequential & secondary costs or damages linked to the defect or replacement of the heating, including the dismantling of the defective product and the installation of a new product.
3. Damage as a result of floods, fires, winds, lightning, accidents, corrosive atmosphere or other conditions beyond the control of Total Tiles Ltd.
4. Use of components or accessories not compatible with BodenWärme products.
5. Products installed outside of the UK.
6. Parts not supplied or designated by Total Tiles Ltd.
7. Damage or repairs caused by improper use, maintenance, operation or servicing.
8. Failure to start due to interruption and / or inadequate electrical service.
9. Any damage caused by frozen or broken water pipes in the event of equipment failure.
10. Changes in the appearance of the product that does not affect its performance.

During the guarantee period Total Tiles will arrange for the repair or (at its discretion) replacement or refund of the cost of the heating. The cost of repair or product replacement is your only remedy under this guarantee which does not affect your statutory rights. Such cost does not extend to any cost other than the direct cost or replacement by Total Tiles and does not extend to costs of relaying, replacing, or repairing any floor covering or floor.

If the heater fails due to damage caused during installation or tiling, this guarantee does not apply, therefore it is important to test the heating as detailed on P8.

In the event of suspected product failure Total Tiles will arrange for the necessary survey work. As there is only a 0.0004% chance of product failure the likely outcome is the identification of an installation fault. Due to this, the cost of the survey will be the liability of the customer until such a time a product fault is identified.

TOTAL TILES LTD SHALL IN NO EVENT BE LIABLE FOR ANY LOSS OR DAMAGES OF ANY KIND, INCLUDING ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING, DIRECTLY OR INDIRECTLY, FROM ANY BREACH OF ANY WARRANTY, EXPRESS OR IMPLIED, OR ANY OTHER FAILURE OF THIS PRODUCT. THIS WARRANTY IS THE ONLY EXPRESS WARRANTY TOTAL TILES MAKES ON THIS PRODUCT. THE DURATION OF ANY IMPLIED WARRANTIES, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IS HEREBY LIMITED TO THE FIFTEEN-YEAR DURATION OF THIS WARRANTY.



## Consumer unit notice

The following notice should be situated in a visible location close to the consumer unit.



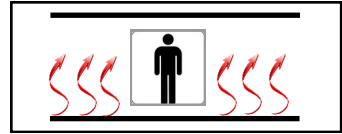
# BodenWärme Floor Heating

Heater Location \_\_\_\_\_

Total Wattage \_\_\_\_\_

### CAUTION

Radiant Floor Heating Systems Installed.  
Warning—Risk of electric shock.  
Electric wiring and heating panels contained  
below the floor. Do not penetrate with nails,  
screws or similar devices. Do not restrict the  
thermal emission of the floor



## Test Results

| Room heating fitted in  | Model Number   | Batch Number   | Installation Date   |
|---|--|--|---|
| <i>E.g.</i><br><i>Bathroom</i>                                  | <i>E.g.</i><br><i>AFMAT/140-280-2.0</i>                        | <i>E.g.</i><br><i>8600017</i>  |   |
| <b>Resistance Reading<br/>Before fitting mat</b>                | <b>Resistance Reading<br/>After fitting mat</b>                | <b>Resistance Reading<br/>During installation<br/>of flooring</b>                | <b>Resistance Reading<br/>After installation of<br/>flooring</b>                |
|   |  |  |   |
| <b>Insulation Resistance<br/>Reading<br/>Before fitting mat</b> | <b>Insulation Resistance<br/>Reading<br/>After fitting mat</b> | <b>Insulation Resistance<br/>Reading<br/>During installation<br/>of flooring</b> | <b>Insulation Resistance<br/>Reading<br/>After installation of<br/>flooring</b> |
|   |  |  |   |



**Disclaimer**

Total Tiles Ltd can accept no responsibility for possible errors in catalogues, brochures, other printed materials and website information. Total Tiles reserve the right to alter products without notice. This also applies to products already on order providing that such alteration can be made without subsequent changes being necessary in specifications already agreed upon. All trade marks in this material are the property of the respective companies. All rights reserved.

## Warranty (Return to retailer)

|                               |  |                   |  |
|-------------------------------|--|-------------------|--|
| Owner's Name:                 |  |                   |  |
| Owner's Address:              |  |                   |  |
| Postcode:                     |  | Telephone Number: |  |
| E-mail:                       |  |                   |  |
| Installer Name:               |  |                   |  |
| Installer's Telephone Number: |  |                   |  |
| Installer's Signature:        |  |                   |  |

I hereby confirm that I have read & understood the contents of the installation manual and that the heater(s) have been installed in accordance with all specifications detailed within. I Acknowledge that no claim can be brought against the manufacturer or its agents for any consequential loss or damage whatsoever. I confirm that the heater(s) was working prior to tiling.

|                                 |  |                      |  |
|---------------------------------|--|----------------------|--|
| Electrician Name:               |  |                      |  |
| Electrician's Telephone Number: |  |                      |  |
| Organisation Registered With:   |  | Registration Number: |  |
| Tiler's Name:                   |  |                      |  |
| Tiler's Telephone Number:       |  |                      |  |
| Date of Purchase:               |  | Purchased from:      |  |
| Model Number:                   |  | Batch Number:        |  |
| Type Of Room:                   |  | Completion date:     |  |

| Room heating fitted in                                  | Model Number   | Batch Number   | Installation Date   |
|---|--|--|---|
| <i>e.g.</i><br><i>Bathroom</i>                          | <i>E.g.</i><br><i>AFMAT/140-280-2.0</i>                | <i>E.g.</i><br><i>8600017</i>  |   |
|   |  |  |   |
| <b>Resistance Reading Before fitting mat</b>            | <b>Resistance Reading After fitting mat</b>            | <b>Resistance Reading During installation of flooring</b>            | <b>Resistance Reading After installation of flooring</b>            |
|   |  |  |   |
| <b>Insulation Resistance Reading Before fitting mat</b> | <b>Insulation Resistance Reading After fitting mat</b> | <b>Insulation Resistance Reading During installation of flooring</b> | <b>Insulation Resistance Reading After installation of flooring</b> |
|   |  |  |   |

## **Warranty (Return to retailer)**

**The form overleaf must be filled out completely, otherwise you may invalidate your warranty.**

**Once completed, please return by one of the methods below.**

**Post**

Total Tiles Ltd  
17 Arkwright Road  
Hadleigh Road Industrial Estate  
Ipswich  
Suffolk  
IP2 0UB

**Fax**

08442723249

**E-mail scanned copy**

warranty@totaltiles.co.uk