

Thank you for purchasing a BN Thermic product. Manufactured to a high standard this product will, if installed and used according to these instructions, give you years of trouble free performance. Installer: Please ensure instructions remain with your customer for their reference.



**REGISTER:** PLEASE REGISTER THIS PRODUCT ONLINE TO ACTIVATE YOUR GUARANTEE AT [www.bnthermic.co.uk](http://www.bnthermic.co.uk)



**IMPORTANT:** PLEASE READ THESE INSTRUCTIONS, NOTE THE SAFE OPERATIONAL REQUIREMENTS, WARNINGS, AND CAUTIONS. USE THIS PRODUCT CORRECTLY, AND WITH CARE FOR THE PURPOSE FOR WHICH IT IS INTENDED. FAILURE TO DO SO MAY CAUSE DAMAGE AND/OR PERSONAL INJURY AND WILL INVALIDATE THE WARRANTY.

## 1. SAFETY INSTRUCTIONS

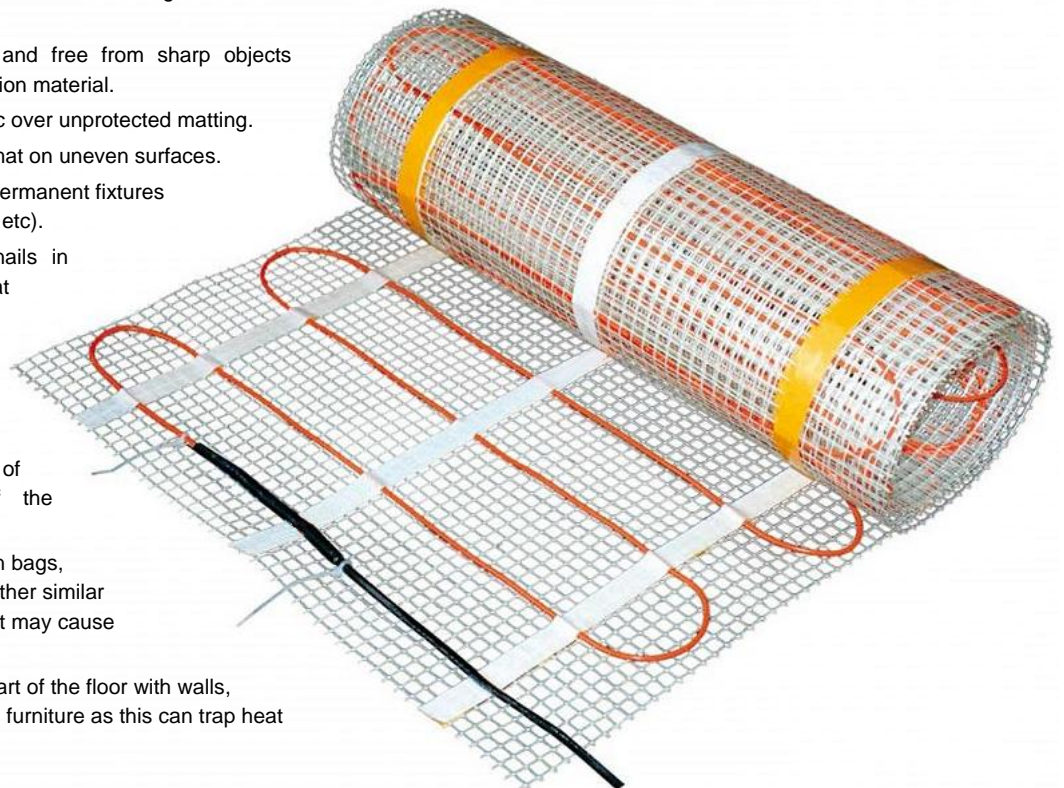
### 1.1 ELECTRICAL SAFETY

**WARNING!** It is the responsibility of the Installer, owner and operator to read, understand and comply with the following:

- 1.1.1 All electrical wiring must be carried out by a fully qualified electrician in accordance with the current IEE wiring regulations.
- 1.1.2 The installation must be protected by a 30mA RCD for safe operation (not included).
- 1.1.3 The cold lead is 3m long. It can be cut / extended to suit the location of the mains power connection box.
- 1.1.4 Check the continuity and resistance of the floor mat cable before, during and after installation and record results on back page.

### 1.2 GENERAL SAFETY INSTRUCTIONS

- ✓ The heating mat is intended for use under many floor coverings including: tile, natural stone, slate, porcelain, marble, limestone & terracotta. It can be installed on top of suitably prepared suspended timber floors or solid concrete floors enabling installation in all room types.
- ✓ Always wear rubber sole boots when installing this mat and avoid unnecessary foot traffic over unprotected matting.
- ✓ Ensure no sharp objects come in contact with the mat cable when installing.
- ✓ All the orange heating cable must be installed in the floor and covered with adhesive and/or self-levelling compound.
- ✓ A minimum clearance of 50mm should be left between the heating mat and perimeter walls.
- ✓ Plan your installation carefully. Always under estimate the amount of matting required by approximately 10% as the orange heating cable cannot be cut in length or reduced in size. Example: If area of floor to be heated is 4.05m<sup>2</sup> select a 3.5m<sup>2</sup> mat.
- ✓ The thermostat floor limit sensor should be located centrally between two cable loops under the 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 orange heating cable and that once turned two heating coils are never closer than 50mm.
- ✓ Ensure floor is clean, dry and free from sharp objects before laying mat and insulation material.
- ✓ Avoid unnecessary foot traffic over unprotected matting.
- X **DO NOT** install the heating mat on uneven surfaces.
- X **DO NOT** put the mat under permanent fixtures (baths, toilets, fitted cabinets etc).
- X **DO NOT** use screws or nails in places where the heating mat is installed.
- X **DO NOT** shorten the mat. Any attempt to shorten the mat will invalidate your guarantee and put you at risk of dangerous overheating of the floor.
- X **DO NOT** use thick rugs, bean bags, exercise mats, dog beds or other similar items on the heated floor as it may cause localised overheating.
- X **DO NOT** cover any heated part of the floor with walls, solid or permanent floor fixed furniture as this can trap heat and cause local overheating.



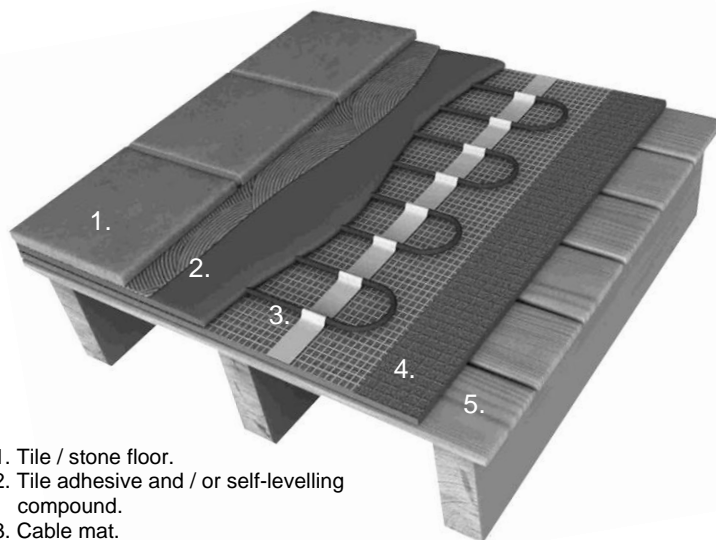
## 2. FLOOR INSTRUCTIONS

### 2.1 CONCRETE SUBFLOORS

2.1.1 The insulation level of your subfloor will affect the performance and running costs of your floor heating system. We recommend that you first cover the floor with a layer of our F-Board-6 or F-Board-10 Insulation. This will minimise heat losses, reduce running costs and ensure quicker heat-up times.

### 2.2 WOODEN SUBFLOORS

2.2.1 These should be reinforced and stabilised to provide a rigid base. Ensure the subfloor is clean and free from any sharp objects. We recommend that you first cover the floor with a layer of F-Board-6 or F-Board-10 Insulation. This will minimise heat losses, reduce running costs and ensure quicker heat-up times.

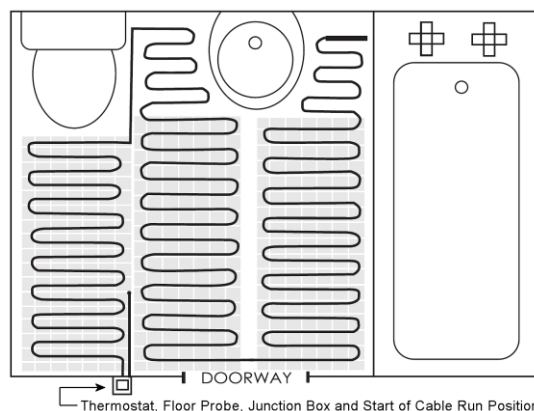


1. Tile / stone floor.
2. Tile adhesive and / or self-levelling compound.
3. Cable mat.
4. F-Board-6 or 10 thermal Insulation.
5. Concrete / timber floor.

## 3. 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 you require. The mats cannot be reduced in size so always undersize the calculated free floor area by 10% before selecting the correct mat(s). Additional mats should be wired in parallel using a suitable junction box.

NOTE:- Do not install the thermostat on an interior bathroom wall.



## 4. HEATING CONTROL

**IMPORTANT!** The heating mat **MUST** be controlled by a thermostat with a floor limit sensor.

Choices range from a sophisticated timer / thermostat with touch-screen interface that can be programmed for convenience to a simple manual thermostat with temperature dial adjustment and on/off selection.

With the exception of bathrooms or shower rooms the thermostat should be installed within the room to be heated and away from draughts.

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 OR if using our touch screen model thermostat (T16CW, T16CS or T16CB) a separate remote wall sensor (T16R) must be purchased and used. This sensor is specifically designed for bathroom type applications.

Refer to the thermostat instructions for installation and technical information.

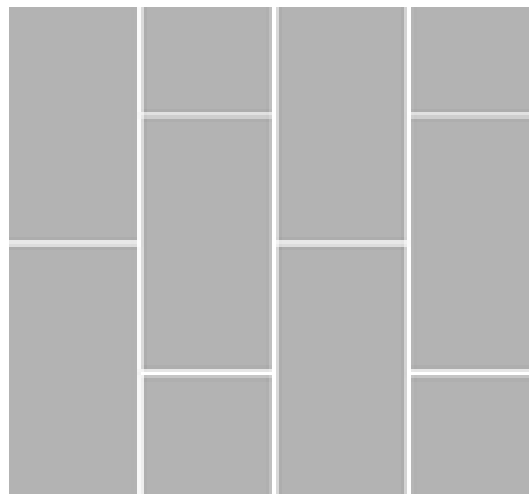
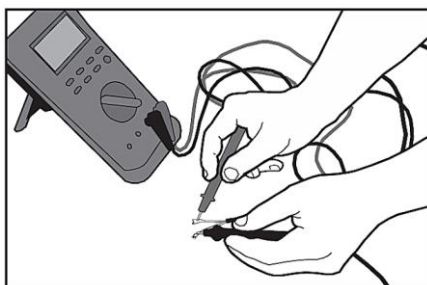
## 5. LAY THE THERMAL INSULATION

The subfloor should be level and dust free. Suitable thermal insulation boards should be used and laid in a staggered pattern as shown. We recommend our F-Board-6 or F-Board-10. These limit the downward heat loss and significantly reduce the cost of heating your room. Secure the insulation boards using a suitable adhesive following the F-Board Instructions.

## 6. TESTING OF THE HEAT 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 value and recorder on the record sheet on the back page of these instructions.

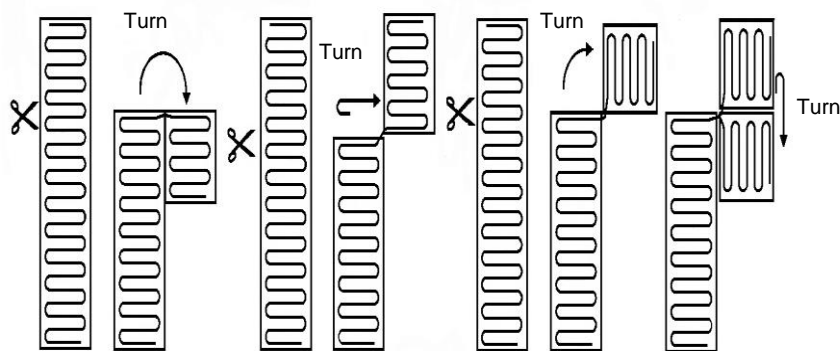
If there is any variation which is out of the mat tolerance of -5% / +10%, stop immediately and call the technical helpline. When checking the resistance make sure you do not touch the metal probes on the multi-meter otherwise the meter will give you the wrong reading as it is also measuring your internal resistance.



## 7. INSTALLING THE MAT

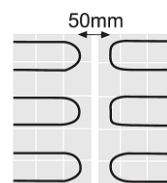
### Laying the Mat

Identify the start point from your plan recognising the 3 metre cold tail and the position of the thermostat and junction box. There should be a minimum clearance of 50mm from walls or floor mounted furniture. Unroll the matting, when the end of a run has been reached, cut the mesh between two cable loops with scissors ensuring you do not cut the orange heating cables. Turn the matting in the required direction and continue unrolling. Leave a minimum 50mm spacing between cable loops. Do NOT shorten the heating cable length.



### Adjusting the Mat

For areas where that will not fit the full mat width of 500mm the cable can be removed from the matting and attached to the floor uniformly with adhesive fixing tape.



### Sticking the mat down

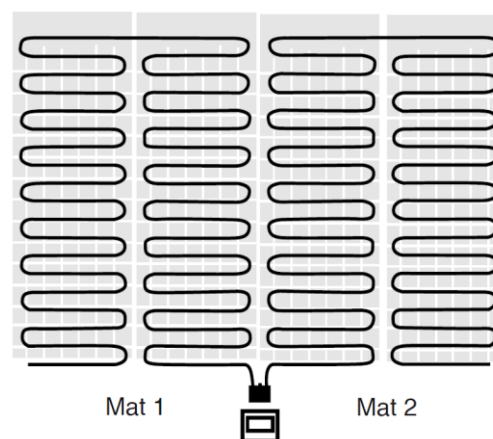
When you are happy with the mat layout stick it to the floor using the integral self-adhesive fixing strips. The matting can be further secured to the floor using hot glue gun, staple gun or additional adhesive tape. This is especially recommended on the outer edges of the matting when using self-levelling compound to prevent the mat lifting. If you use a staple gun it must only be used on the matting and NOT on the orange heating cable.

### Joining Multiple Mats

If your floor area is bigger than the largest mat available it is possible to use multiple mats by wiring them in parallel. (Example: a calculated heating area of 18m<sup>2</sup> would require 10m<sup>2</sup> + 8m<sup>2</sup> mats). Please ensure if joining large mats in parallel the load rating of the thermostat is not exceeded. Consult your electrician.

### Resistance Test

We recommend that once the mat is fully stuck to the floor and before using any self-levelling compound or adhesive a second resistance test is carried out and recorded on the back page. (Second resistance)



## 8. INSTALLING THE FLOOR SENSOR

The floor sensor should be positioned between two orange heating coils and under the matting in the flexible 12mm conduit supplied with the thermostat. The sensor should be positioned a minimum of 350mm from any wall. Seal the end of the conduit with tape to prevent adhesive entering. Ensure that you have sufficient sensor cable to stretch back to your low level junction box and then onto the thermostat. Do NOT cross under any of the heating cables. You will need to create a groove in the floor to recess the conduit below the mat.

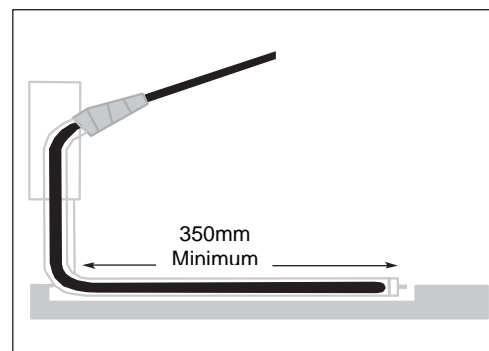
## 9. ELECTRICAL INSTALATION

### 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 first check for continuity of the floor sensor and retest the resistance of the mat. This reading should be recorded on the record sheet (Third reading). The mat MUST be earthed – connect the braided wire to a suitable Earth connection.

The other two wires are not pole sensitive and one wire should be connected to Neutral and the other to Live. Do NOT power up the heater mat until all the adhesive and grout has completely dried out. This can typically be 14 days BUT consult the manufactures recommendations.



## 10. FIRST SWITCHING ON

Once the adhesive and grout are fully dried the heater mat can be turned on BUT we recommend that for the first week it is run at a reduced temperature bring the system in stages up to the required operating temperature. This is best achieved by adjusting the floor probe set temperature.

## 11. RUNNING

This is achieved by setting the required temperature on the thermostat. After a period of non-use it may take some time for the room to reach temperature. Increasing the set temperature will not speed up the heating process but merely over heat the room once set temperature is achieved. We recommend a maximum floor temperature setting of 28°C for optimum comfort conditions.

## 12. COMPLETE YOUR INSTALATION

Following installation all the technical information on the back page should be fully completed. This should include an additional sketch plan of the mat or mats layout and position of the floor sensor. This together with the purchase receipt and layout sketch should be permanently fixed near the consumer unit.

### 13. TECHNICAL / INSTALATION INFORMATION

Mat Model	Area to be heated m <sup>2</sup>	Output (W)	Length (m)	Nominal Resistance (Ohms)	-5% Resistance (Ohms)	+10% Resistance (Ohms)
<b>150W/m<sup>2</sup> Standard Output Mats</b>						
M150-005	0.5	75	1.0	705.3	671.7	775.8
M150-010	1.0	150	2.0	352.7	335.9	388.0
M150-015	1.5	225	3.0	235.1	223.9	258.6
M150-020	2.0	300	4.0	176.3	167.9	193.9
M150-025	2.5	375	5.0	141.1	134.4	155.2
M150-030	3.0	450	6.0	117.6	112.0	129.4
M150-035	3.5	525	7.0	100.8	96.0	110.9
M150-040	4.0	600	8.0	88.2	84.0	97.0
M150-045	4.5	675	9.0	78.4	74.7	86.2
M150-050	5.0	750	10.0	70.5	67.1	77.6
M150-060	6.0	900	12.0	58.8	56.0	64.7
M150-070	7.0	1050	14.0	50.4	48.0	55.4
M150-080	8.0	1200	16.0	44.1	42.0	48.5
M150-090	9.0	1350	18.0	39.2	37.3	43.1
M150-100	10.0	1500	20.0	35.3	33.6	38.8
M150-110	11.0	1650	22.0	32.1	30.6	35.3
M150-120	12.0	1800	24.0	29.4	28.0	32.3
M150-140	14.0	2100	28.0	25.2	24.0	27.7
M150-160	16.0	2400	32.0	22.0	21.0	24.2
<b>100W/m<sup>2</sup> Low Output Mats</b>						
M100-010	1.0	100	2.0	529.0	502.5	581.9
M100-015	1.5	150	3.0	352.7	335.9	388.0
M100-020	2.0	200	4.0	264.5	251.9	291.0
M100-030	3.0	300	6.0	176.3	167.9	193.9
M100-040	4.0	400	8.0	132.3	126.0	145.5
M100-050	5.0	500	10.0	105.8	100.8	97.0
M100-060	6.0	600	12.0	88.2	84.0	97.0
M100-070	7.0	700	14.0	76.0	72.2	83.6
M100-080	8.0	800	16.0	66.1	63.0	72.7
M100-090	9.0	900	18.0	58.8	56.0	64.7
M100-100	10.0	1000	20.0	52.9	50.4	58.2
M100-120	12.0	1200	24.0	44.1	42.0	48.5
<b>200W/m<sup>2</sup> High Output Mats</b>						
M200-010	1.0	200	2.0	264.5	251.9	291.0
M200-020	2.0	400	4.0	132.3	126.0	145.5
M200-030	3.0	600	6.0	88.2	84.0	97.0
M200-040	4.0	800	8.0	66.1	63.0	72.7
M200-050	5.0	1000	10.0	52.9	50.4	58.2
M200-060	6.0	1200	12.0	44.1	42.0	48.5
M200-070	7.0	1400	14.0	37.8	36.0	41.6
M200-080	8.0	1600	16.0	33.1	31.5	36.4
M200-090	9.0	1800	18.0	29.4	28.0	32.3
M200-100	10.0	2000	20.0	26.5	25.2	29.2

Installer - Please fill in the details for each mat you install and leave a separate drawing showing instalation layout and position of the floor sensor						
Mat Model	Example M150-090					
Date first resistance taken	30-08-2016					
First resistance	37.4 Ω	Ω	Ω	Ω	Ω	Ω
Date second resistance taken	02-09-2016					
Second resistance	37.5 Ω	Ω	Ω	Ω	Ω	Ω
Electrical Instalation date	14-09-2016					
Third resistance	37.4 Ω	Ω	Ω	Ω	Ω	Ω
Insulation Resistance	8.5 MΩ	MΩ	MΩ	MΩ	MΩ	MΩ



This product conforms to EU Directive 2002/96/EC.

This appliance bears the symbol of the crossed waste bin. This indicates that, at the end of its useful life, it must not be disposed of as domestic waste, but must be taken to a collection centre for waste electrical and electronic equipment. It is the user's responsibility to dispose of this appliance through the appropriate channels. Failure to do so may incur penalties established by laws governing waste disposal.

**NOTE:** It is our policy to continually improve products and as such we reserve the right to alter data, specifications and component parts without prior notice.

**IMPORTANT:** No liability is accepted for incorrect use of this product.

**WARRANTY:** Your BN Thermic product correctly installed is guaranteed for life as long as it is registered within 30 day of purchase (see below). In the un-likely event of malfunction resulting from faulty manufacture. The Guarantee covers the full purchase price but not the cost of repairing or replacing the heater in the floor. Control devices carry the manufacturers 1 year warranty only. This guarantee in no way prejudices your rights under common law and is offered as an addition to consumer liability rights.

**REGISTER:** Activate your warranty by registering online at [www.bnthermic.co.uk](http://www.bnthermic.co.uk) and retain this data and Installation plan for future reference.

MINS-v03-3

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