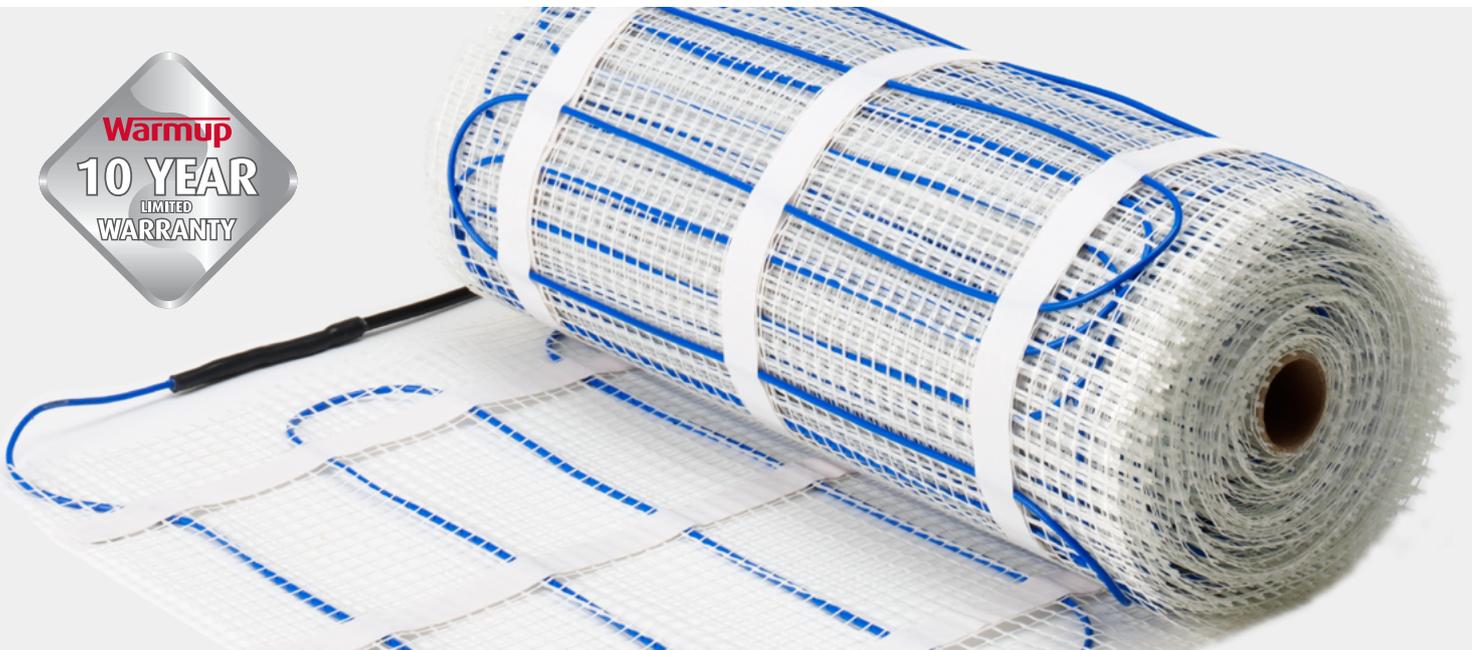


Warmup Heating Mat - type PVC

Warmup®

The world's **best-selling** floor heating brand™

Installation Manual



Helpine
0845 345 2288

IMPORTANT!

Read this manual before attempting to install your Heating Mat. Incorrect installation could damage the heating mat and will invalidate your warranty. Complete and submit your warranty from online at www.warmup.co.uk

CE

SAFETY Net™
Installation-Guarantee

www.warmup.co.uk

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WARNING

Your Warmup® Floor heating mat has been designed so that installation is quick and straight forward, but as with all electrical systems, certain procedures must be strictly followed. Please ensure that you have the correct heating mat(s) for the area you wish to heat. Warmup plc, the manufacturer of the Heating Mat, accepts 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.

It is important that before, during and after installation that all requirements are met and understood. If the instructions are followed, you should have no problems. If you do require help at any stage, please contact our helpline:

0845 345 2288

You may also find a copy of this manual, wiring instructions and other helpful information on our website:

www.warmup.co.uk

PVC 150W/m ²						
Model	Area (m ²)	Wattage (W)	Resistance (Ω)			Amps
			(-5 %)	Ω	(+5%)	
PVC1	1,0	150	335	353	370	0,65
PVC1.5	1,5	225	223	235	247	0,98
PVC2	2,0	300	168	176	185	1,30
PVC2.5	2,5	375	134	141	148	1,63
PVC3	3,0	450	112	118	124	1,96
PVC3.5	3,5	525	96	101	106	2,28
PVC4	4,0	600	84	88	93	2,61
PVC4.5	4,5	675	74	78	82	2,93
PVC5	5,0	750	67	71	74	3,26
PVC6	6,0	900	56	59	62	3,91
PVC7	7,0	1050	48	50	53	4,57
PVC8	8,0	1200	42	44	46	5,22
PVC9	9,0	1350	37	39	41	5,87
PVC10	10,0	1500	34	35	37	6,52
PVC12	12,0	1800	28	29	31	7,83
PVC15	15,0	2250	22	24	25	9,78

PVC 200W/m ²						
Model	Area (m ²)	Wattage (W)	Resistance (Ω)			Amps
			(-5 %)	Ω	(+5%)	
2PVCM1R	1,0	200	251	265	278	0,87
2PVCM1.5R	1,5	300	168	176	185	1,30
2PVCM2R	2,0	400	126	132	139	1,74
2PVCM2.5R	2,5	500	101	106	111	2,17
2PVCM3R	3,0	600	84	88	93	2,61
2PVCM3.5R	3,5	700	72	76	79	3,04
2PVCM4R	4,0	800	63	66	69	3,48
2PVCM4.5R	4,5	900	56	59	62	3,91
2PVCM5R	5,0	1000	50	53	56	4,35
2PVCM6R	6,0	1200	42	44	46	5,22
2PVCM7R	7,0	1400	36	38	40	6,09
2PVCM8R	8,0	1600	31	33	35	6,96
2PVCM9R	9,0	1800	28	29	31	7,83
2PVCM10R	10,0	2000	25	27	28	8,70
2PVCM15R	15,0	3000	17	18	19	13,04

Voltage
230VAC ~ 50Hz
Mat thickness
3-3,5mm
Inner insulation
ETFE
Connection cable length
3m
Certificates
BEAB and CE Declaration of conformity

DO

Carefully read this instruction manual before commencing installation. Consult our helpline or a competent professional if you are unsure how to proceed.

Ensure the system is tested before, during and after installation.

Plan your mat layout and installation so that any drilling after tiling (e.g. for sanitary ware) will not damage the wiring.

Maintain a minimum gap of 50mm between wire runs and from conductive parts such as water pipes.

Check that the mat is working immediately before commencing tiling.

Take particular care when tiling not to dislodge or damage the heating wire. Ensure that during the course of the installation that no damage is caused by, for example, falling objects, sharp objects etc.

Wear gloves to prevent irritation from the fibreglass mesh.

Ensure the end cap and manufactured joint are under a full bed adhesive or levelling compound and covered with a tile.

Ensure that a heat loss calculation has been carried out and heating requirements have been met if you are using the floor heating system as a primary source of heating.

Ensure that the heating mats are separated from other heat sources such as luminaires and chimneys.

Ensure that the maximum thermal resistance of the floor does not exceed 0.15 [m²K / W].

Ensure that the control card at the back of the manual is completed and fixed at the main consumer unit along with any plans and electrical test records.

Floor Coverings

This installation manual gives instruction for installation of the Warmup floor heating mat under ceramic, quarry or natural stone tiles. The maximum thermal resistance of the floor must not exceed 0.15 [m²K / W].

It is possible to install the heating element under floor finishes such as wood or vinyl by applying a self levelling compound over the heating mat. You must ensure that all heating cables are completely covered with a minimum of 10mm self levelling compound. It is important that the levelling compound is suitable for use with floor heating.

NOTE: Delicate floor finishes such as wood or vinyl have a maximum floor surface temperature of 27°C. This temperature must **NOT** be exceeded. Please contact Warmup for further advice if you wish to install the heating mat under any floor finishes other than ceramic, quarry or natural stone tiles.

Components included in your Warmup Heating Mat kit:

- Warmup PVC Mat
- Installation Manual

Additional components needed as part of your Warmup heating installation:

- A thermostat with floor sensor
- 30mA Residual Current Device (RCD), required as part of all installations
- Digital Multi-meter required for testing the resistance of the mat and floor sensor
- Electrical housing, back boxes and junction boxes. (Back box for the thermostat must be at least 35mm deep)
- Electrical trunking/conduit for housing the power leads
- Duct Tape (to secure the floor sensor and loose wires)
- Scissors for cutting the fibreglass mesh
- Gloves

NOTE: It is recommended to use Warmup Thermostats

Subfloor Preparation

Wooden Subfloors

- Ensure adequate floor ventilation
- Existing floorboards need to be securely fixed and if necessary pre-levelled with a latex/cement self-levelling compound to give a flush fit for the subsequently applied WBP plywood (18mm) or an insulated tile backer board (10mm) (Warmup® Insulation Boards).
- A rigid base is essential - Fixing WBP plywood or Warmup Insulation Board to joists will not provide a suitable floor finish for accepting tiles.

Concrete Subfloors

- Ensure you use an extruded polystyrene building or tile backer board (Warmup Insulation Board) if installing your mat onto a cement-based floor.
- Fixing the board should be as per the manufacturer's instructions.

Testing the Heating Mat

The heating mats must be tested before, during and after tiling. We recommend the use of a digital multi-meter set to a range of 0-2 K ohms for testing. The resistance (ohms) of each mat should be measured. You should carry out the following tests and should expect the results detailed below:

- Live to neutral should show the Ohms value listed in the table on page 2. A +/- 5% Ohm reading tolerance is allowed under manufacturing guidelines. Record the readings on the control card at the back of the manual.
- Live to earth and neutral to earth should show infinity.

NOTE: Due to the high resistance of the heating element, it may not be possible to get a continuity reading from the mat and as such, continuity testers are not recommended. When checking resistance, make sure your hands do not touch the meter's probes as the measurement will include your internal body resistance and render the measurement inaccurate. If you do not get the expected results or at any time you believe there may be a problem, please contact Warmup's Helpline for guidance.

Floor Sensor

Ensure that the floor sensor is tested before the final floor finish has been laid. The floor sensor values can be found in the thermostat instructions. When testing the floor sensor ensure that the meter can read up to 20k ohms.

Electrical Safety Considerations

As with all electrical projects, all mains electrical connections must be undertaken by a certified electrician. All work must conform to current Electrical Regulations. The electric floor heating system must be controlled via a floor sensor thermostat at all times.

Installing a Residual Current Device (RCD)

Warmup Floor Heating Mats must be wired via an 30mA RCD. You must install a dedicated RCD if one is not already present. You may wish to use a fused spur/RCD. No more than 4.8kW of heating may be connected to a single 30mA RCD.

NOTE: It is possible to run the heating mat from an existing circuit. Consult a certified electrician to determine whether or not the circuit can handle the load and if it is RCD protected.

Installing Electrical Boxes and Trunking

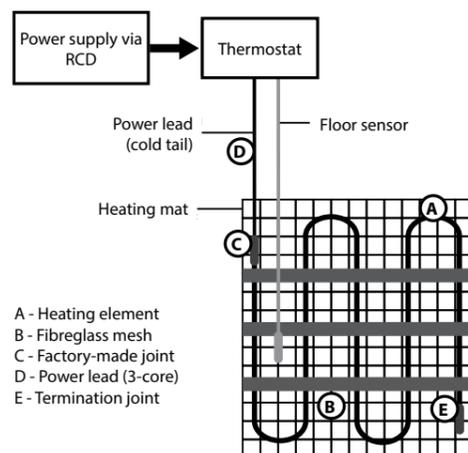
You will require a deep (35-40mm) back box for the thermostat. If you are installing more than two heating mats, a junction box will be required. The wiring from the heating mat to the thermostat should be protected by conduit or plastic trunking.

Connecting the Thermostat

The thermostat must be connected to the mains electrical supply via a double pole isolator fused spur or RCD that has a contact separation in all poles providing full disconnection under over-voltage category III conditions. The thermostat should be installed within the room to be heated. In most bathroom installations the thermostat cannot be located within the bathroom itself as the thermostat is IP20 rated and must be located outside of Zone 2. In such cases the thermostat must be fitted to the outside of an internal wall of the bathroom, as close to the under floor installation as possible.

Warmup thermostats are rated up to 16 amps. For larger installations exceeding 16 amps multiple thermostats or a suitable contactor will be required. For further advice contact Warmup.

Once the electrical connections have been made and the system has been tested, the electrician must complete the control card at the back of this installation manual. This information must be displayed at or near to the consumer unit.



Installing the Mat

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Step 1 - Mark the subfloor

Ensure that the subfloor is of the same construction where you intend to lay the mat to ensure that the heating mat performs effectively. Warmup always recommend that insulation boards, such as Warmup Insulation Boards (10mm recommended), are used to improve the efficiency of the mats.

Using a permanent marker, mark out areas on the subfloor where units and fixtures will be fitted. DO NOT install the mat in any of these areas. Start by laying the mat in the location closest to the thermostat. Mark the positions and planned route of the power lead cables as well as the floor sensor.

ALL MANUFACTURED JOINTS NEED TO BE PLACED ON THE FLOOR UNDER A FULL BED OF ADHESIVE AND TILES.

If you have awkward areas in the room the loose wire can be removed from the mat to fit these areas. When doing this ensure that you DO NOT let the heating element cross or touch. Ensure any loose wires are no closer than 50mm from each other, the wall or from any other wires still attached to the mesh. Loose wire taken from the mat can be secured to the floor using duct tape.

Step 2 - Test the Heating mat

Before installing the heating mat perform the same test as described on page 5 to ensure that the heating mat has not been damaged during planning.

Step 3 - Cut, turn and affix the mat

When you have marked the positions and planned the route of the mat on the floor, start laying the mat cutting and turning where the marks have been made, beginning at the location closest to the thermostat. Be careful and never cut the heating cable. Affix the mat to the floor using the double sided tape on the mat.

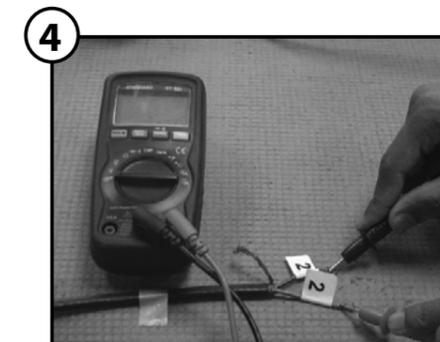
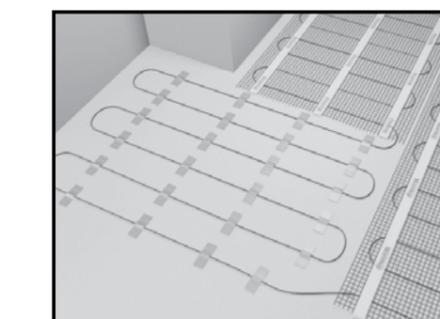
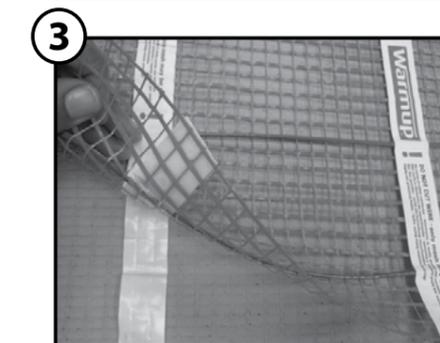
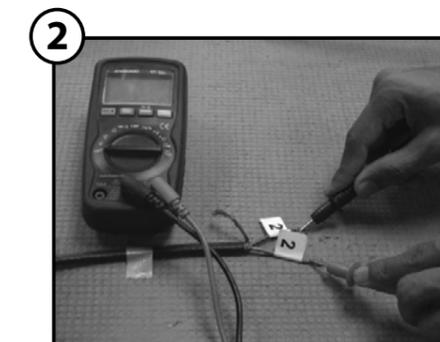
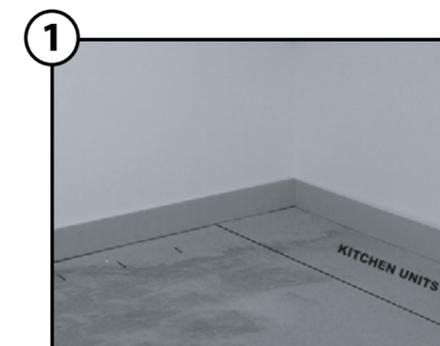
Use duct tape to affix any loose wires which have been removed from the mat. Once the mat is fitted, ensure that there are no loose sections, paying close attention to the ends of the mats and any section which has been turned.

DO NOT TAPE OVER THE MANUFACTURED JOINTS OR FLOOR SENSOR TIP.

If you find that once the heating mat has been laid you have too much of the mat left over STOP, contact Warmup immediately. Remember you must NEVER cut the heating element to fit an area or leave surplus mats behind units or fixtures. If you are installing multiple mats in one room they should be connected in parallel.

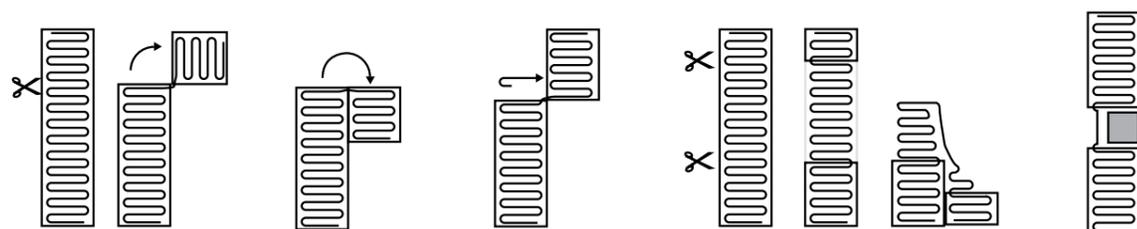
Step 4 - After installation test

Perform the same test as in step 2. If at this stage you do not get the expected reading or you are getting an open circuit contact Warmup.



How to Modify the Mat

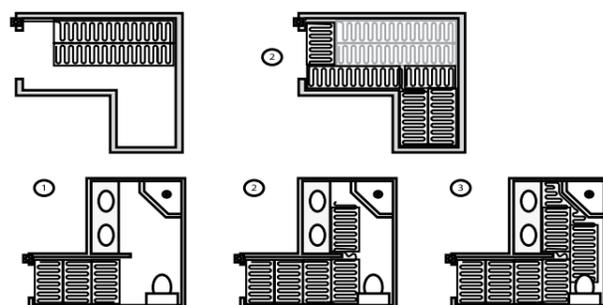
In order to fit your mat into a specific area, it may be necessary to cut and turn the mat (examples below). **NEVER** cut the heating element. When cutting and flipping the mat take care not to cut or damage the heating cable.



Check mat size

Please take a moment to double-check that your plan has the proper room dimensions and that you have the correct size and proper number of mats. Mats should run backwards and forwards between walls and obstructions as shown in the examples. Depending on insulation, air-flow and overall heat-loss within the room, additional heating may be required.

NOTE: When laying two or more heating mats, ensure the cold tails reach the thermostat.



Step 5 - Install floor sensor

Place the floor sensor below the fibreglass mesh. The floor sensor must be installed centrally between the two runs of heating element and should extend a minimum of 150mm into the heated area. Secure the sensor to the floor using tape.

NOTE: DO NOT TAPE OVER THE SENSOR TIP.

It is best to avoid placing the floor sensor in areas of heat fluctuations e.g. near hot water pipes or radiators. It may be necessary to cut a channel in the floor to ensure that the floor sensor and power supply cable are kept at the same height as the heating element.

When installing the floor sensor (located in the thermostat box) DO NOT cross over or under the heating element. At this stage the floor sensor must also be tested. Check the resistance of the floor sensor using your multi-meter (20K ohms). You should get a reading of approximately 9-23K ohms depending on the room temperature. If you do not get a reading your floor sensor may be damaged. If this is the case call the Warmup Technical Helpline to request a replacement.

NOTE: The sensor may be extended up to 50m.

Step 6 - Fit Power Leads

Each mat is fitted with a single power lead for connecting the mat to the thermostat. To ensure the power lead remains at the same level as the heating element, you may need to cut or chisel a channel in the subfloor. When doing this take care not to damage the heating element. Secure the power lead in place using tape but do not tape over the manufactured joint where the power supply cable meets the heating element.

The power lead will go into the electrical trunking/conduit up to the thermostat. It is possible to extend the power lead using twin and earth cable.

NOTE: Instructions for fitting the Warmup thermostat are included in the thermostat box.

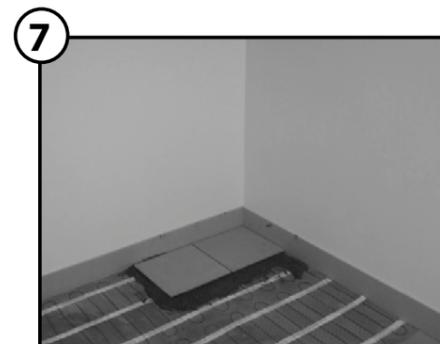
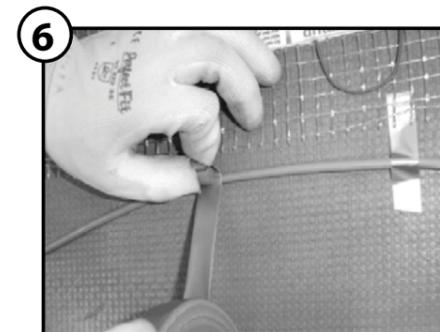
Step 7 - Tile & grout the floor

Ensure you use tile adhesives and grouts suitable for use with floor heating systems (they must contain a flexible additive). It is important that each tile is solidly bedded in adhesive, with no air gaps or voids beneath. (2 Part Flexible Adhesive). Do NOT dot and dab the tiles. Check with the manufacturers of the adhesive to ensure suitability. Use a plastic notched trowel to move the adhesive along the element. Use a piece of cardboard on top of the exposed element to use as a crawl board. Ensure to test the resistance of the heating mat regularly during tiling to check the mat hasn't been damaged during tiling.

If using flexible levelling compound before tiling make sure that the mat is completely flat, extra tape can be used to secure the edges of the fibre glass mesh to the floor.

Do not store tiles or heavy objects on the mat while tiling. Wait for 8 days to allow the adhesive to dry before you switch on the system.

FINALLY TEST THE RESISTANCE OF THE HEATING MAT(S) ONCE TILING IS COMPLETE.



Warmup Floor Heating Mat is guaranteed by Warmup plc ("Warmup") to be free from defects in materials and workmanship under normal use and maintenance, and is guaranteed to remain so subject to the limitations and conditions described below. The UNDERTILE HEATING MAT is guaranteed for 10 years for the floor covering under which it is fitted, except as provided below (and your attention is drawn to the exclusions listed at the end of this guarantee).

This 10 years guarantee applies:

- only if the unit is registered with Warmup within 30 days after purchase. Registration can be completed online at www.warmup.co.uk. In the event of a claim, proof of purchase is required, so keep your invoice and receipt - such invoice and receipt should state the exact model that has been purchased;

and

- only if the heating mat has been earthed and protected by a Residual Current Device (RCD) at all times.

Thermostats are guaranteed for a period of 3 YEARS from the date of purchase, except as provided below.

Neither guarantee continues if the floor covering over the heating mat(s) is damaged, lifted, replaced, repaired or covered with subsequent layers of flooring. The guarantee period begins on the date of purchase. During the period of the guarantee Warmup will arrange for the heating mat to be repaired or (at its discretion) have parts replaced free of charge. The cost of the repair or 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 direct cost of repair or replacement by Warmup and does not extend to costs of relaying, replacing or repairing any floor covering or floor. If the heating mat fails due to damage caused during installation or tiling, this guarantee does not apply. It is therefore important to check that the heating mat is working (as specified in the installation manual) prior to tiling.

WARMUP PLC SHALL IN NO EVENT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO EXTRA UTILITY EXPENSES OR DAMAGES TO PROPERTY.

WARMUP PLC is not responsible for:

- Damage or repairs required as a consequence of faulty installation or application.
- Damage as a result of floods, fires, winds, lightning, accidents, corrosive atmosphere or other conditions beyond the control of Warmup plc.
- Use of components or accessories not compatible with this unit.
- Normal maintenance as described in the installation and operating manual, such as cleaning thermostat.
- Parts not supplied or designated by Warmup.
- Damage or repairs required as a result of any improper use, maintenance, operation or servicing.
- Failure to start due to interruption and/or inadequate electrical service.
- Any damage caused by frozen or broken water pipes in the event of equipment failure.
- Changes in the appearance of the product that does not affect its performance.



SafetyNet™ Installation Guidelines: If you make a mistake and damage the new heating mat before laying the floor covering, return the damaged heating mat to Warmup within 30 days along with your original dated sales receipt. WARMUP WILL REPLACE ANY PRE-TILED HEATING MAT (MAXIMUM 1 HEATING MAT) WITH ANOTHER HEATING MAT OF THE SAME MAKE AND MODEL - FREE.

Register your Warmup® warranty online at www.warmup.co.uk

- Repaired heating mats carry a 5 year warranty only. Under no circumstances is Warmup responsible for the repair or replacement of any tiles / floor covering which may be removed or damaged in order to affect the repair.
- The SafetyNet™ Installation Guarantee does not cover any other type of damage, misuse or improper installation due to improper adhesive or subfloor conditions. Limit of one free replacement heating mat per customer or installer.
- Damage to the heating mat that occurs after tiling, such as lifting a damaged tile once it has set, or subfloor movement causing floor damage, is not covered by the SafetyNet™ Guarantee.

Warmup[®]

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