



Underfloor Heating Mat Kit Installation Instructions

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General instructions

Underfloor heating mat consists of a thin heating cable fixed onto a preformed mat. The overall build up height is only approximately 4 mm. The mat is designed to be a very simple and flexible system for bonding to the floor. The mat is used for heating tiled floors and is available in 120 & 175W/m². It is suitable for both concrete and timber subfloors. The mat has only one connection end. The electric and electromagnetic field is negligible.

- The heating is controlled by a TR81671 thermostat; (included in the Kit).
- The system must be connected to a 230V supply via a 30mA RCD.
- The mat can be cut, but the heating cable must not be cut. The cold connection cable may be cut.
- The mat should be at room temperature at installation. At lower temperatures the adhesive properties of the tape will be reduced.
- The insulation and resistance values of the cable must be measured and recorded three times: 1. Before laying 2. After laying 3. After fixing the tiles. Write these values on the test protocol. The 10 year warranty is only valid when the protocol is completed and signed by a qualified installer.
- Wait at least one week before the heating is switched on, increase the heating gradually.
- The installation must be carried out in accordance with the current IEE regulations.
- The completed floor must not be covered with thick insulating carpets, beanbag seating or the like as this can result in temperatures harmful to the floor.

Installation must be carried out according to electrical regulations and under the supervision of a qualified electrician.

Heater Mat Power, Length & Resistance values (Resistance tolerances: $\pm 10\%$)

Part no.	Power (W)	Mat length (m)	Mat Area (m ²)	Resistance (Ohms)	Area (m ²)
TR60230D	150	0.5 x 2.5	1.25	350	1.25
TR60232D	200	0.5 x 3.4	1.70	266	1.7
TR60234D	250	0.5 x 4.2	2.10	210	2.1
TR60236D	340	0.5 x 5.4	2.70	157	2.7
TR60238D	400	0.5 x 6.8	3.40	132	3.4
TR60240D	480	0.5 x 7.8	3.90	111	3.9
TR60242D	530	0.5 x 8.8	4.40	100	4.4
TR60244D	640	0.5 x 10.8	5.40	83	5.4
TR60246D	780	0.5 x 13.2	6.60	68	6.6
TR60248D	940	0.5 x 15.8	7.90	56	7.9
TR175-1170D	1170	0.5 x 13.4	6.70	45	6.7
TR60250D	1380	0.5 x 23.0	11.50	38	11.5

Min. insulation value 10 M

The mat should cover 80-90% of the available floor. Once you have chosen your mat, draw a layout plan of your floor to make sure the mat will fit.

Min. insulation value 10 M Ω

To select the correct mat, take the floor area to be heated and select the largest mat below that area. E.g. for a 6m² area select TR60244D at 5.4m².

Multiple mats should be connected in parallel either directly into the thermostat or into a junction box and then a connection taken back to the thermostat. The maximum thermostat load is 15 amps (3450W). Installations exceeding this load will need to be controlled with a suitable power contactor or alternatively by more than one thermostat - consult your electrician about this.

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Sub Floor

Make sure the floor is solid, without any springiness and clear of any dirt or residue. Wooden or chipboard flooring with more than 30 cm between the joists usually needs to be reinforced to prevent cracking and the floor tiles from releasing. This also applies without underfloor heating.

Installation

Draw on the floor the mat layout. See Figure 1 for an example layout.

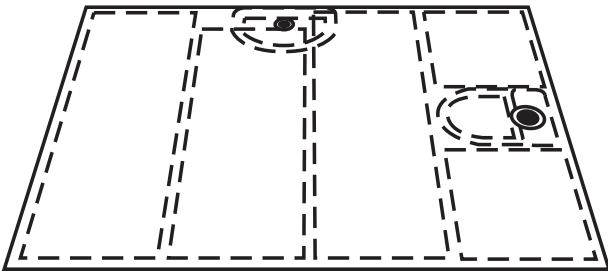


Fig. 1

The sensor should be placed in the supplied conduit pipe right to the end, within the pipe. Cut a groove in the floor for the conduit pipe. Connect the sensor pipe under the heating cable mat in a place between two runs of heating cable. Also ensure that it will not be covered by rugs, furniture or the like. Tape over the pipe end. The sensor is now totally within the pipe and protected from the screed or adhesive. Keep the bend at the wall as gentle as possible, this will allow the sensor to be removed in the future, if necessary. See Figure 2.

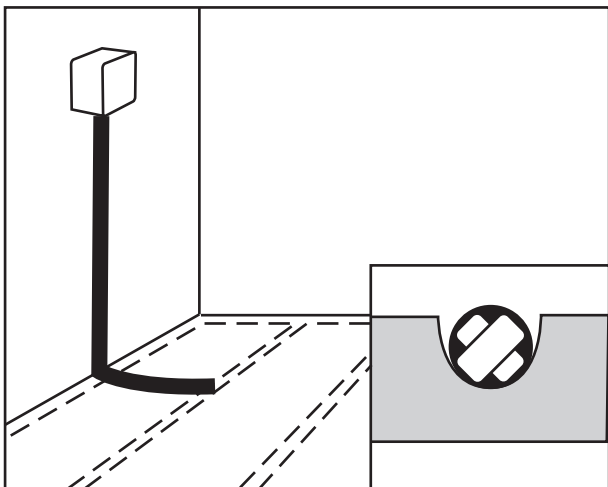
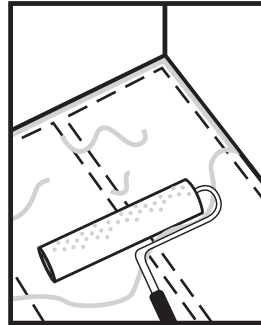


Fig. 2



Prime the floor using either a PVA adhesive watered down 4 parts water to 1 part adhesive or a proprietary sealer. Its main purpose is to seal the floor to ensure a good bond is formed with the mat. See Figure 3.

Fig. 3

Start fixing the mat in one corner. If the cold cable is not long enough to reach the connection point/ thermostat, you can cut the matting into as many sections as needed and install the cable along the wall to come closer. The cable splice must be inset in the floor. The mat must not be laid under fixed furnishings, toilets or similar objects. Note the position of the toilet's screws and avoid that area. Remove approx. 30 cm of the protective paper from the tape (all three pieces of tapes), align the matting and press down the first 30 cm of the matting. See Figure 4.

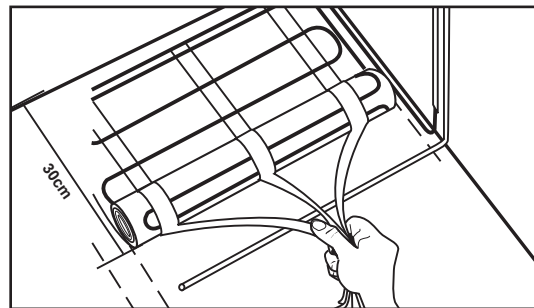


Fig.4

Hold the protective paper from all the tapes. Carefully pull the protective paper. The matting will then roll out and bond to the floor. Press the tape against the floor. Roll out the matting to the opposite wall. Cut the mesh BUT NOT the cable. Loosen the protective paper and roll the matting back again. The cables should not be closer than 5 cm to each other when cutting the mesh. See Figures 5 & 6.

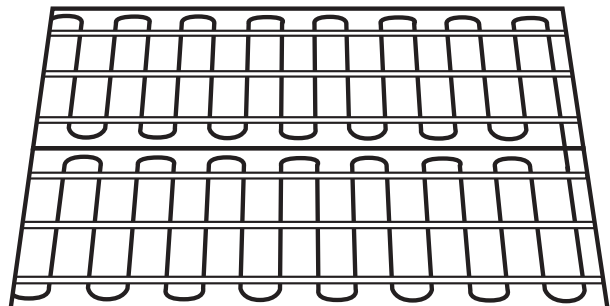


Fig.5

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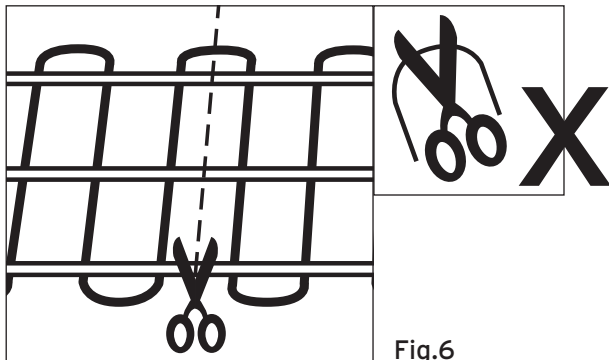


Fig.6

Cut and release a piece of mesh and go round toilets and similar objects. See Figure 7.

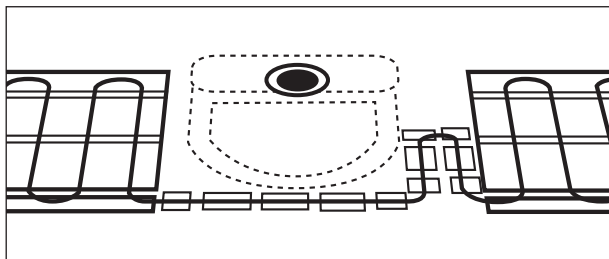


Fig.7

Cut another piece of mesh and place the cable as in Figure 7. Now, the matting can be rolled out at the right side, otherwise the installation will be more difficult. When the matting has been laid, go back and press down the tape. The tape is pressure sensitive and adheres better when pressed down well. If you walk on the tape wear shoes with a soft sole or go in bare feet to get a more constant pressure. See Figure 8. To further improve the adhesive qualities the floor can be primed once more using undiluted primer; the matting will then bond very well to the floor. The mesh can also be stapled to boards.

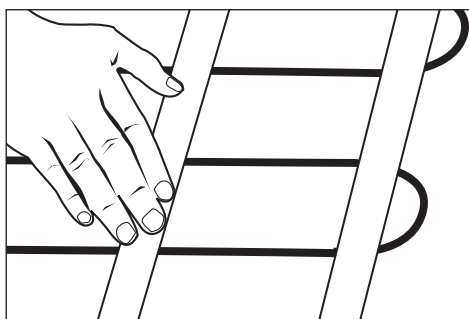
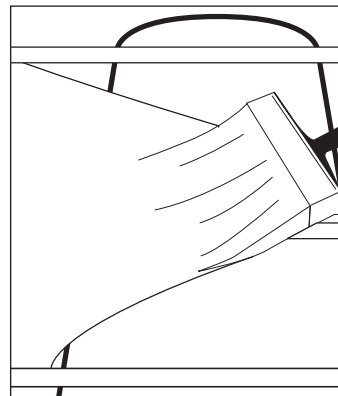


Fig.8

The insulation and resistance of the matting should now be measured. The values should be noted in the test protocol. The position of the matting should be documented on a sketch or photograph and be kept by the distribution box.



The floor is now ready for screeding. Use a flexible levelling screed and follow the manufacturer's instructions. The mat can also be covered with a complete bed of flexible tile adhesive. See Figure 9.

Fig.9

The floor is now ready for the tiling. Follow the manufacturer's instructions with regard to the waterproof membrane. Lay the new flooring according to the manufacturer's instructions. Use flexible adhesive and grout. See Figure 10.

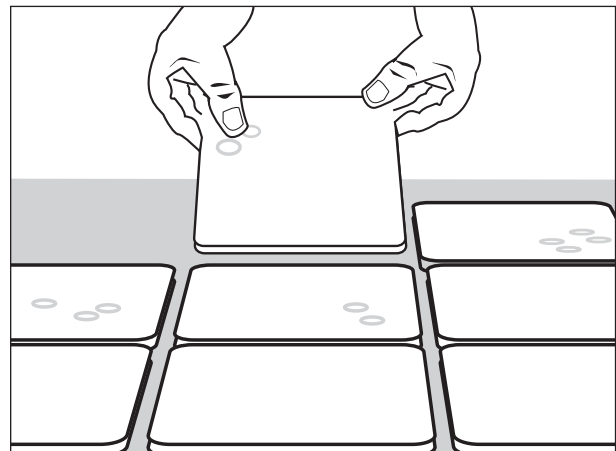


Fig.10

The completed floor must not be covered with thick insulating rugs, beanbag-seating or the like, as these can cause about temperatures harmful to floor.

Allow the system to dry naturally, for at least one week, and then switch on the heating at a low level - we would recommend an initial setting of 16°C and increasing the temperature by one degree a day until your comfort level is reached (typically 22 - 26°C). Note - the heating may be slow to react initially especially if installed on a new screeded floor or in a new building.

See separate instructions for programming of the thermostat.

➤ Helpline: 01472 346795