Dimplex

Installation and Operating Instructions

Electric Tile-warming Mats

CE

For use with Thermostat Model: DTW16S

Model	Dimensions	Area Covered	Wattage @ 230Vac	Amperage @ 230Vac
DTW1M	0.5 x 2.0m	1.0sqm	130 W	0.57 A
DTW1.5M	0.5 x 3.0m	1.5sqm	195 W	0.85 A
DTW2M	0.5 x 4.0m	2.0sqm	260 W	1.13 A
DTW3M	0.5 x 6.0m	3.0sqm	390 W	1.70 A
DTW4M	0.5 x 8.0m	4.0sqm	520 W	2.26 A
DTW5M	0.5 x 10.0m	5.0sqm	650 W	2.83 A
DTW6M	0.5 x 12.0m	6.0sqm	780 W	3.39 A

IMPORTANT INFORMATION

In order to avoid damaging your new heating system, it is important to follow these rules:

1. **NEVER CUT THE HEATING ELEMENT.**
2. **NEVER SHORTEN the heating element**
3. **NEVER allow the heater to overlap itself or any other wire. This could cause over-heating.**
4. **NEVER run the sensor wire or power lead over or under the heating element.**
5. **NEVER place built-in units or furniture with solid bases on the heated floor area.**
6. **NEVER connect two mats in series. Only connect mats in parallel.**
7. **ALWAYS ensure that the system is tested before, during and after installation.**
8. **ALWAYS make certain that everyone involved in the installation or construction is aware of the system and the care required to protect it from damage.**
9. **ALWAYS keep the spacing of the heating element consistent.**
10. **NEVER CUT THE HEATING ELEMENT.**

For the full list of "General Considerations & Do's and Dont's" please read the information on the following page.

Double-check your Measurements:

Before commencing the installation of your heating system, please take a moment to double-check that your plan has the proper room dimensions and that you have the correct size and number of heaters for the job. Once a heating mat has been cut, it cannot be returned.

Items required for System Installation:

Components Included in each Tile Warming Kit:
- Heating mat
- Fixing tape

Components **Not** Included as part of the kit:

- ***Thermostat with floor sensor***
- RCD: required as part of **all** installations
- Multi-meter: for testing the resistance of the mats
- Electrical trunking/conduit for housing the unheated power leads
- Electrical Housing, back boxes and junction boxes; back box for the Thermostat must be at least 35mm deep
- Permanent marker and measuring tape
- Pair of small utility scissors for cutting the fibreglass mesh

Optional Tools:
- Heavy duty stapler (can be used to attach the mesh mat to plywood in place of or in conjunction with double-sided tape)
- Hot Glue Gun can be used to fix the power leads and/or the floor sensor

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UK customer helpline (8:00am - 6:00pm Mon-Fri; 8:30am - 1:00pm Sat)

Customer Services: Tel. 0870 727 0101
Fax. 0870 727 0102
e-mail customer.services@glendimplex.com
Republic of Ireland: Tel. 01 8424833

General Considerations / Do's and Don'ts

Choice of floor covering
The Dimplex system has been designed primarily for use with stone or tile floors. If you are considering using any other type of floor covering, such as carpet or wood laminate, please contact our customers services helpline for more information before starting your installation.

Electrical Installation: a job for the professionals
As with all electrical projects, we strongly recommend that you should not undertake any electrical work unless you are qualified to do so. All work must conform to the current IEE Wiring Regulations.

Installing an RCD
The Dimplex Undertile Heating System must be wired via an 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 30 milliamp RCD. For larger loads, use multiple RCD's or a 100 milliamp RCD.
NOTE: It is possible to run the heater(s) from an existing circuit. Consult with an electrician to determine whether or not the circuit can handle the load and if it is RCD protected.

Testing of the Heater
One of the most important steps to be taken when installing the heating system is the testing process. The system should be tested **before, during and after** its installation:

Before: Using a multi-meter, check the resistance of each mat prior to installation to ensure that it has not been damaged whilst in transit to the installation site. Make a note of the mat resistances in the table located on page 4 of this manual.

During: Test the resistance of each mat again once they have been secured to the subfloor to maintain that no damage occurred during installation.

After: Test again after the floor covering has been laid to ensure that no damage has been done during the setting of the tiles.

Do's and Don'ts
Do - plan the the heater layout and installation so that any drilling after tiling (e.g.. for fixing sanitary ware) will not damage the wiring.
Do - use ceramic tile adhesives and grouts suitable for use with undertile heating (they must contain a flexible additive)
Do - wait at least 10 days before switching the system on for the first time in order for the tile adhesive to dry.

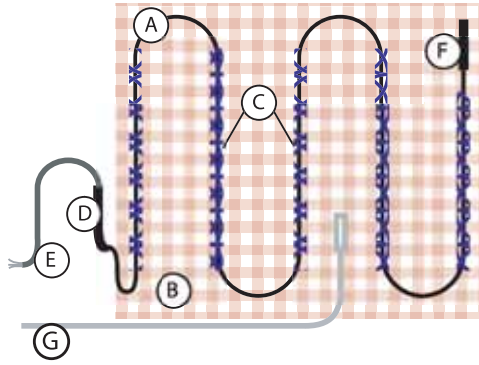
Don't - ever cut or shorten the heating wire at any time
Don't - allow traffic over an installed mat. This is when damage is most likely to occur.
Don't - store tiles or other sharp or heavy objects on the mats while tiling.
Don't - attempt to install the heating up walls or up a set of stairs.
Don't - install heating mats under permanent fixtures.

IMPORTANT!
If at any point during the installation you are unsure of whether a problem exists or how to solve it, please call the helpline on 0870 727 0101. Most issues can be easily solved with a call.

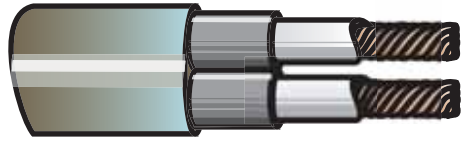
Technical Information

The Dimplex Heating Mat

A - Heating Element
B - Fibreglass mesh
C - Securing thread
D - Factory-made joint
E - Power lead (3-core)
F - Termination joint
G - Floor sensor



System Components:



The Heating Element
The heating element is constructed of two layers of Teflon insulation and a metallic earth braid surrounding two heating wires.
The element is attached to the fibreglass mesh (B) using a strong polyblend thread (C) and is spaced so as to give an even heat throughout the covered area. The heating element is terminated at one end with a 3m power lead (E) which supplies power to the element via the thermostat. The factory made joint (D) which connects the two must be installed under the tiles. It may be necessary to cut a small groove in the subfloor to allow for the extra thickness of the power lead.

Separating the Heating Element from the Fibreglass Mesh
In almost all installations, it will be necessary to separate the heating element from the mesh in order to fit the mat into an irregularly shaped area.
This is most easily done using a small pair of scissors, **not** a utility knife. When cutting the mesh, it is crucial that the element is not nicked, cut or damaged in any way. If you believe you have cut the wire, call the helpline immediately.

Floor sensor
Proper installation of the floor sensor (G) is critical if the thermostat and floor warming system is to work properly.
The sensor, which is embedded in the adhesive, should be installed centrally between two runs of heating element and should extend a minimum of 150mm into the heated area. It is best to avoid placing the tip of the sensor in areas prone to heat fluctuations due to drafts, sunlight, radiators or hot water pipes. You may wish to cut a groove in the floor to accept the sensor cable and tip in order to keep them at the same height as the heating element.

Testing Your Heating System

We recommend that you test your heating system at least three time during the installation process to ensure that you do not install a damaged heating mat:
- before installation
- during the mat fixing process
- immediately prior to tiling

Testing with a multi-meter:
The resistance (ohms) of each mat should be measured from the live (brown) wire to the neutral (blue) wire. We recommend the use of a digital multi-meter set to a range of 0-200 ohms for testing.
Please note that due to the high resistance of the wire, it may not be possible to get a continuity reading from a mat and as such, continuity testers are not recommended.
Take a moment to note the readings you get from the multi-meter in the table below.

The readings should be within +/- 15% of these measurements:
1 sqm mat = 405 ohms
1.5 sqm mat = 270 ohms
2 sqm mat = 180 ohms
3 sqm mat = 150 ohms
4 sqm mat = 110 ohms
5 sqm mat = 90 ohms
6 sqm mat = 70 ohms

If at any time you do not get the proper readings or suspect that there is a problem, call the helpline immediately on 0870 727 0101.

Roll No.	Mat Size	"Proper" reading	Test 1 reading	Test 2 Reading	Test 3 Reading

Electrical considerations:

Install the 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 30 milliamp RCD. For larger loads, use multiple RCD's or a 100 milliamp RCD.

NOTE: It is possible to run the heater(s) from an existing circuit. Consult with an electrician to determine whether or not the circuit can handle the load and if it is RCD protected.

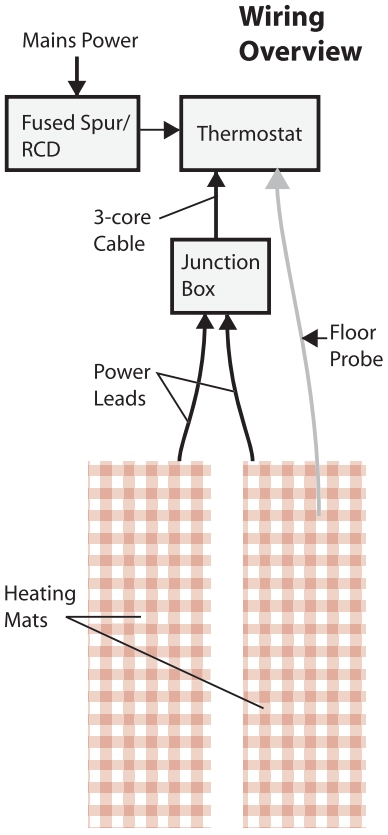
Install electrical boxes and trunking

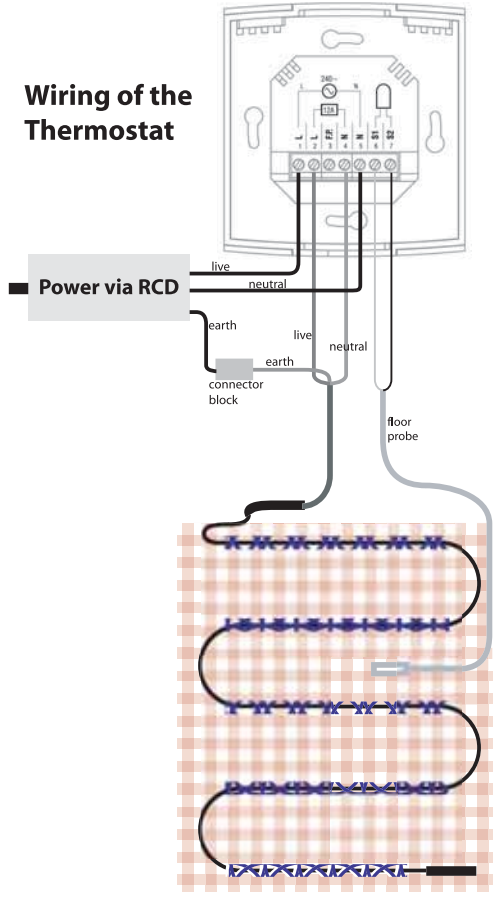
You will require a deep (35-40mm) back box for the thermostat. If you are installing more than two heaters, a junction box will also be required. The wiring from the heater to the thermostat should be chased into the wall and protected by conduit or plastic trunking.

Connecting the thermostat

The thermostat should be connected to the main electrical supply via a fuse or circuit breaker in accordance with wiring regulations.

The thermostat should be installed within the room or area to be heated. In the case of bathroom installations, electrical regulations prohibit the installation of the thermostat within the bathroom itself. In such cases, the thermostat should be fitted to the outside of an internal wall of the bathroom, as close as possible to the heating power supply wires.





Subfloor Preparations

Wooden Subfloors

Ensure adequate underfloor ventilation.
Securely fix existing floorboards and if necessary, pre-level with a latex/cement self-levelling compound to give a flush fit for the subsequently applied WBP plywood.

Refer to BS 5385: Part 3, clause 14.4 regarding sealing the backs and edges of the plywood.

Fixing ply directly to joists will not always provide a sufficiently stable floor finish for accepting tiles; fitting tongue & groove flooring and then over-boarding with ply or tile backer board is recommended. A rigid base is essential.

The above recommendations apply to floors of small areas as advised in clause 14.4 of BS 5385: Part 3: 1999.

Concrete Subfloors

For best results and ease of installation, the use of an extruded polystyrene "building" or "tile backer board" with cement-based facing is recommended. Fixing of the board should be as per the manufacturer's instructions.

After attaching the board to the subfloor, the undertile heating system may be laid directly on top of the board, and then tiled over. It is important to ensure that the tile adhesive and grout used are flexible and that the tile backer/building board has been fitted as per the manufacturer's instructions. High-quality, cement-based adhesives with their flexible additives are most suitable.

Mat Layout

1. Mark the Floor
Using a permanent marker, mark out the areas on the subfloor where units and fixtures will be located. Do not install the heating mat in any of these areas.

Next, mark the positions and planned route of the power lead cables as well as the position of the floor sensor. Indicate on the subfloor the locations where the mats will need to be flipped or turned and where loose wire (cut away from mesh) will need to be laid.

Please refer to page 8 to see how mats can be modified to fit various areas.

2. Mark the Mat
Mark the location of any cuts, flips on turns on the mat itself. At this point, it is best to double-check that you have the proper number and size of mats for your area.

3. Test the Heating Mats
Perform test #1 for each mat. as explained in this manual.

4. Dry fit the mat(s)
Lay the mats out according to your plan. This will allow you to make any last minute adjustments in the mat layout prior to securing them. Be careful to avoid damaging the wire at this point. Stepping on or kinking the mat can cause a fracture in the wire.

5. Fit the Mats
Starting with the mat furthest from the thermostat location, secure the mats to the subfloor using either the double-sided tape provided in the kit or by using a staple gun (if fitting to a plywood subfloor). Never staple the heating wire itself, only the fibreglass mesh. If using the tape, be sure to locate the tape near the edge of the mat. This will avoid leaving any loose mesh material which is more difficult to cover with adhesive or self-levelling compound.
If you have a loose wire section (wire cut away from the mesh), make sure the loose wires are no closer than 50mm from each other or from any other wires still attached to the mesh.
Once the mats are in place, do a check to ensure that there are no loose sections, paying close attention to the ends of the mats and any section which has been modified by flipping or turning.

Mat Layout (cont'd)

6. **Install Floor Sensor**
The floor sensor that comes with the thermostat should now be placed below the fibreglass mesh, centred between two heating elements. It should be secured in place using either double-sided tape or hot glue. It is also wise at the point to check the resistance of the floor sensor using you multi-meter. You should get a reading of approximately 10,000 - 12,000 ohms, depending on the room temperature. You may need to change the setting on your meter in order to accommodate for the higher readings. If you do not get a reading, your sensor may be damaged. If so, call the helpline to obtain a replacement.

7. **Fit the Power Leads**
Each mat is fitted with a single power lead for connecting the heating mat to the thermostat. In order to keep the power leads at the same height as the heating element, you may wish to cut or chisel a channel in the subfloor. Take care not to damage the heating element. Secure the leads in place using either the double-sided tape or hot glue.
The power leads will go into the conduit or trunking that leads from the floor to the thermostat. The power leads may be shortened or extended as needed. However, you must not cut the factory made joint and you must make certain that the joint will be covered with both adhesive and tiles.

8. **Test the Heating Mats**
Perform test #2 for each mat as explained on page 2.

Covering the Heating Mats with Tiles

When all your mats are installed and the power leads and floor sensor have been secured, it is time to begin laying your tiles. There are two methods available to you, a one-step or two-step method:

One-Step Method:
Apply a thick layer (5-10mm) of tile adhesive directly onto the heating mats.
Lay the tiles directly onto the adhesive layer.

Two-Step Method:
1. Completely cover the heating mats with a smooth layer of flexible adhesive or latex self-levelling compound and allow to dry. Allow this level to dry; it will normally take 1 day per mm.

2. Apply a thin layer (3mm) of flexible adhesive and tile as normal.

When choosing which method to use, keep the following in mind:
- It is easier to lay mosaic tiles using the two-step method
- If this is your first installation, you may find it easier to use the two-step method
- If the floor will not be tiled right away, it is better to use the two-step method for protecting the wire
- The one-step method is most commonly used by experienced installers of this heating system

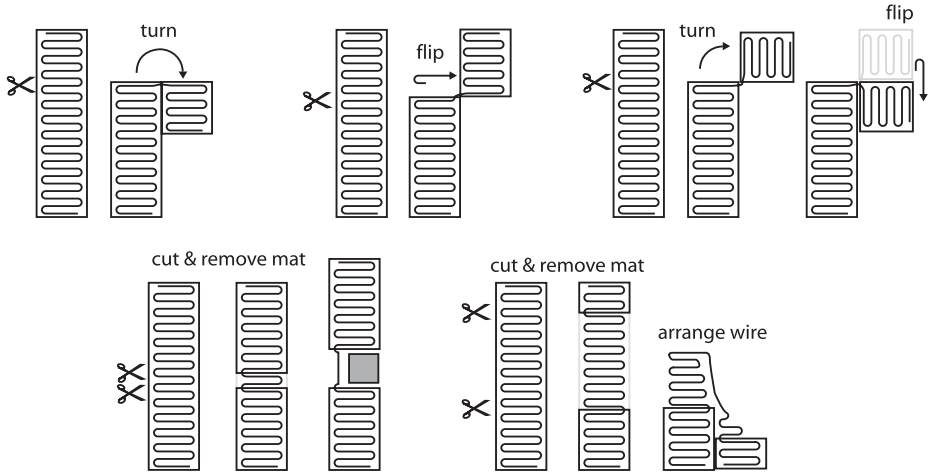
Test the Heating Mats
Perform test #3 for each mat as explained in this manual.

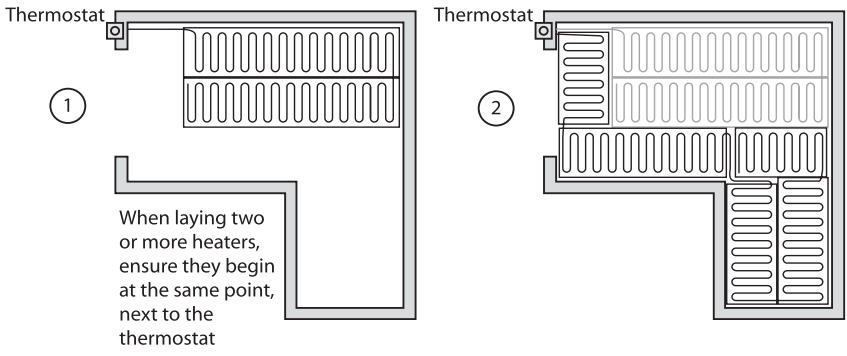
Waiting Period
You must allow the tile adhesive and any self-levelling used to dry naturally before powering-up the heating system. This can take 10 to 14 days depending on the amount of materials used. Failure to wait the proper amount of time will result in damage to the system as well as cause the adhesive and grout to dry too quickly, thereby becoming brittle, leading to tiles lifting and/or cracking.

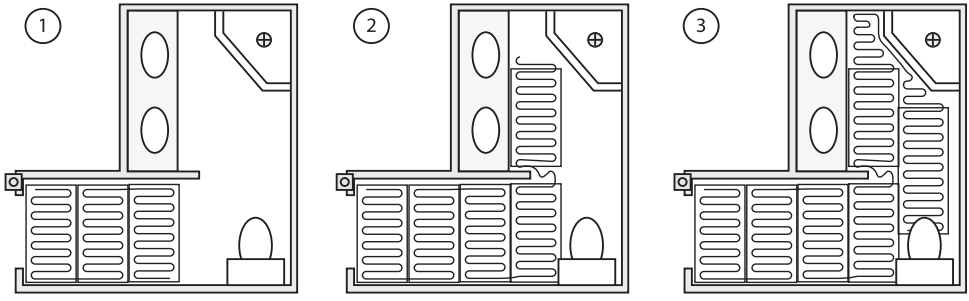
How to Make Turns and Flips with Matting System:

The heating mats can be modified by cutting the fibreglass mesh **(NOT THE WIRE)** and either flipping or turning the mat as needed. Examples of turns and flips can be found below.
It may be necessary to completely remove the heating wire from the mesh in order to fit the system into small or odd-shaped areas. It is essential that care is taken during this process not to nick the wires with your scissors.

Examples of mat modifications & room layouts:







Mat layout grid:

Notes:

Warranty

This warranty does not affect your statutory rights.
This Dimplex Undertile Heater is guaranteed against any fault caused by manufacturing defect for a period of 10 years from date of purchase. There is no other warranty, express or implied. No claim can be brought against the manufacturer or its agents for any consequential damages whatsoever.

This warranty covers the cost of replacement or repair, at the discretion of the manufacturer, of the heater only.

This warranty is subject to the following conditions:

1. **To qualify for your 10-year warranty, please register your product by completing and returning the attached "Warranty Registration" form.**
2. In the event of a claim, proof of purchase will be required, so keep your invoice with this warranty.
3. The heater has been installed and used in full compliance with the installation manual.
4. The heater has been earthed and protected by an RCD at all times.
5. The heater is used in conjunction with a thermostat or control system approved by Dimplex.
6. The warranty is returned to Glen Dimplex within 30 days of purchase of the heater(s).
7. If Glen Dimplex or its agents carry out diagnostic or remedial work as a result of a claim being made, and evidence of incorrect installation or usage of the heater becomes apparent, Glen Dimplex or its agents shall have the right to levy reasonable charges for the work undertaken by them.

If the heater fails due to damage caused during installation or tiling, this warranty does not apply. It is therefore essential to check that the heater is working (as specified in the installation manual) prior to tiling.

Name: _____

Address: _____

Post code: _____ Telephone: _____

Email: _____

Installer: _____ Electrician: _____

Date of purchase: _____

Please state in which room the heating system is installed:

Kitchen ☐ Bathroom ☐ Conservatory ☐ Hall ☐ Other: _____

Subfloor Type:
Insulated Tile Backer Board ☐ Wood ☐ Concrete/Screed ☐ Other: _____

I hereby confirm that I have read and understand the contents of the Installation Manual and that the heater has been installed as specified therein.
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 was working prior to the commencement of tiling.

Signed: _____ Date: _____

Please
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Stamp
Here

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