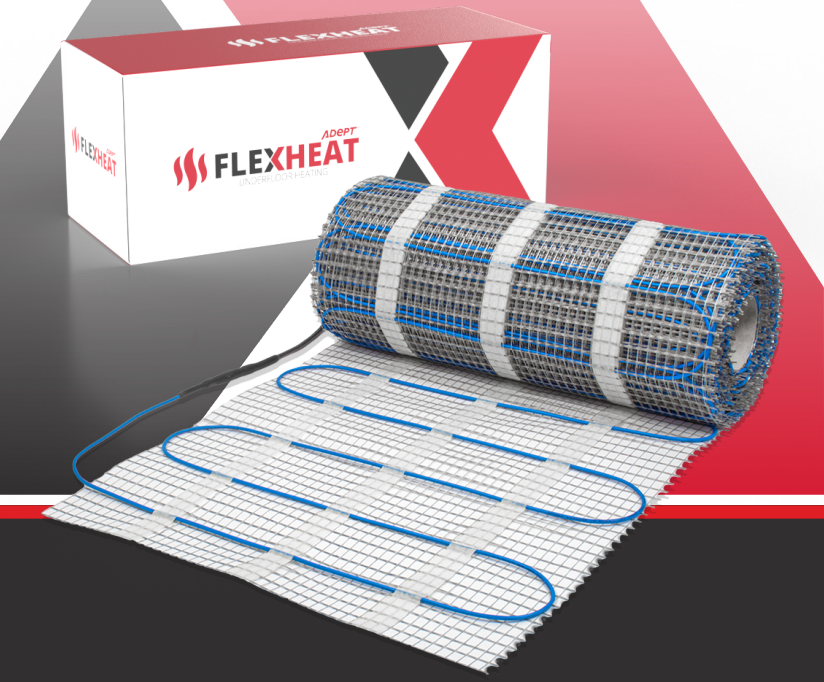
FLEXHEAT

Electric Underfloor Heating Mat



Installation manual

The package contains

- **Thin self adhesive heating mat**
- **Thermostat and temperature sensor (optional)**
- **Flexible conduit for the temperature sensor**

You can do it yourself

By following these simple instructions, you will be able to install the FLEXHEAT underfloor heating mat yourself.

Please note: Its connection with the mains needs to be carried out by a qualified electrician.

Electric underfloor heating is highly efficient, with a 100% efficiency rate at the point of use. Since the generated heat is exactly where it is needed, there is no need to transport energy, resulting in every joule of energy being utilised for heat. As a result, every pound spent on running electric underfloor heating is fully converted into heat where it is needed.

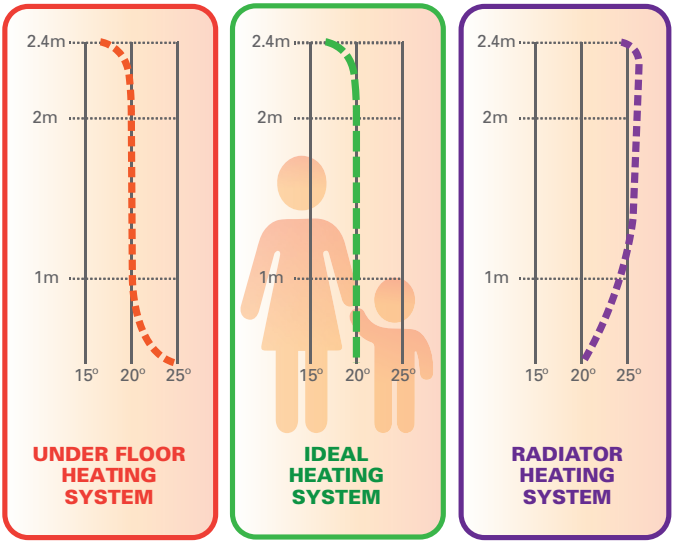


Diagram to show vertical temperature distribution within the room for various types of heating.

How will FLEXHEAT warm up your life?

- Favourable temperature distribution
- Simple and hassle-free installation
- Can be installed on existing tiles – no need to dig up the floor
- The thin mat means only a small raise of the floor level
- No maintenance
- 20 year manufacturers guarantee – peace of mind
- 100% efficiency at the point of use

Where can FLEXHEAT underfloor heating mats be used?

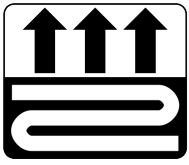
- Everywhere in new building projects or renovations
- Especially useful in renovations such as kitchens, bathrooms, anterooms and halls as the rise in floor level is kept to a minimum
- Concrete floors, existing ceramic tiles, terrazzo, moisture proof floorboards

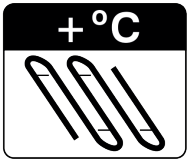
What floor finishes are compatible with Flexheat FLEXHEAT heating mats

- Ceramic, Porcelain, and natural stone floor tiles which provide optimal heat transmission

When used with self-levelling compound, the following floor finishes can also be used:

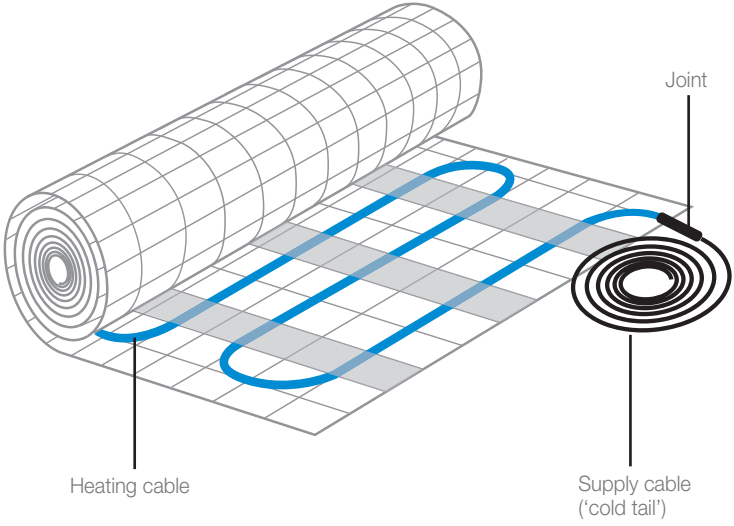
- Wooden mosaic, oak parquet or laminated floor panels
- Carpet (check manufacturers compatibility and tog rating)
- Vinyl (check manufacturers compatibility)
- Look for quality marks that indicate compatability with electric underfloor heating





How is FLEXHEAT manufactured?

The heating mat consists of a thin heating cable that is taped to a fibreglass mesh and is 500mm wide, ending in a 4m “cold tail” supply cable. The mesh is coated with adhesive to enable the mat to stick to the base floor. The mat thickness is approx. 3.5mm.



Types of FLEXHEAT underfloor heating mat

100 W/m²

mat type	dimensions	area	power
100 W/m²	**m x m**	**m²**	**W**
100/1,0	0.5 x 2.0	1.0	100
100/1,5	0.5 x 3.0	1.5	150
100/2,0	0.5 x 4.0	2.0	200
100/3,0	0.5 x 6.0	3.0	300
100/4,0	0.5 x 8.0	4.0	400
100/5,0	0.5 x 10.0	5.0	500
100/6,0	0.5 x 12.0	6.0	600
100/8,0	0.5 x 16.0	8.0	800
100/10,0	0.5 x 20.0	10.0	1000

Note: The nominal power output may differ by +5, -10%

160 W/m²

mat type	dimensions	area	power
160 W/m²	**m x m**	**m²**	**W**
160/0,5	0.5 x 1.0	0.5	80
160/1,0	0.5 x 2.0	1.0	160
160/1,5	0.5 x 3.0	1.5	240
160/2,0	0.5 x 4.0	2.0	320
160/2,5	0.5 x 5.0	2.5	400
160/3,0	0.5 x 6.0	3.0	480
160/3,5	0.5 x 7.0	3.5	560
160/4,0	0.5 x 8.0	4.0	640
160/5,0	0.5 x 10.0	5.0	800
160/6,0	0.5 x 12.0	6.0	960
160/7,0	0.5 x 14.0	7.0	1120
160/8,0	0.5 x 16.0	8.0	1280
160/10,0	0.5 x 20.0	10.0	1600

Note: The nominal power output may differ +5, -10%

200 W/m²

mat type	dimensions	area	power
200 W/m²	**m x m**	**m²**	**W**
200/1.0	0.5 x 2.0	1.0	200
200/1.5	0.5 x 3.0	1.5	300
200/2.0	0.5 x 4.0	2.0	400
200/2.5	0.5 x 5.0	2.5	500
200/3.0	0.5 x 6.0	3.0	600
200/3.5	0.5 x 7.0	3.5	700
200/4.0	0.5 x 8.0	4.0	800
200/5.0	0.5 x 10.0	5.0	1000
200/6.0	0.5 x 12.0	6.0	1200
200/8.0	0.5 x 16.0	8.0	1600
200/10.0	0.5 x 20.0	10.0	2000

Note: The nominal power output may differ by +5, -10%

The mats of 160W/m² and 200W/m² can only be installed under floor tiles.

The mats of 100W/m² power can be installed under any floor type.

Where to start?

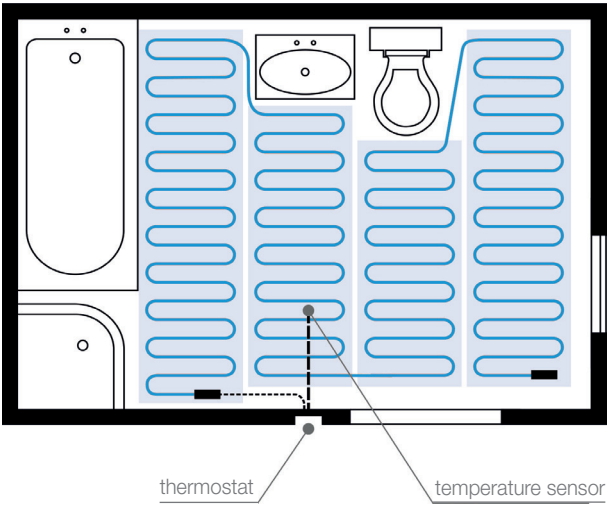
1 Measure the part of the floor on which the heating mat is to be installed.

Note: If you start the installation works in a new build with no fixed furniture draw (mark) the fixed elements (cabinets, a bath tub, a toilet, a shower, etc.) on the floor and calculate the area to be heated.

Calculate the area of the ‘free’ floor and choose an appropriate mat.

2 Install an installation box for the thermostat, ready for the power supply to be installed.

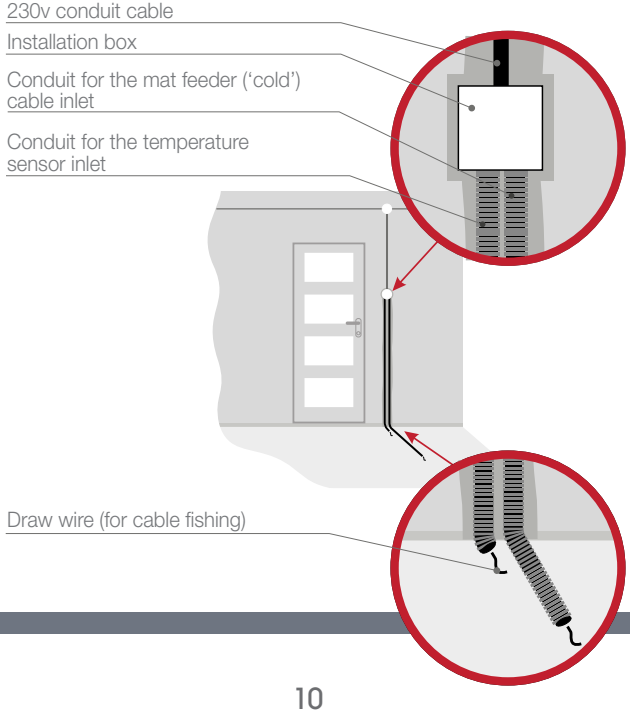
Remember!
During the later stages of installation, you’re going to install your thermostat in the installation box. The thermostat should be placed close to light switches – this makes wiring easier, and more practical.



Very important! The thermostat should be mounted on the outside of any bathroom/wetroom/sauna walls. This will protect the thermostat from any moisture and means you're complying with regulations.

3 Install two (2) conduits from the installation box (the inside dia. minimum 11mm) to the floor. For aesthetic reasons, lay them in previously made chases in the wall.

a) Later on (at the stage of the mat installation), you are going to insert a cable with the temperature sensor into one of the conduits.



Remember!
The temperature sensor should be placed at the centre of the heated surface therefore, the conduit (laid in the groove, cut in the floor) should ‘enter’ the heating zone.

b) the cold tail cables will be inserted into the other conduit. Cut out a groove in the floor (but much shorter) and lay a conduit in it, leading it to the installation box.

Very important! The conduits cannot be bent at a right angle (at the contact of the wall with the floor); a smooth bend should be maintained.

Before fixing the mat

1. Clean the base on which the mat is to be laid
   - **a)** level the surface
   - **b)** carefully scrub any old tiles
2. Install the mat with the temperature sensor (in the conduit under the wall plaster) up to the installation box.

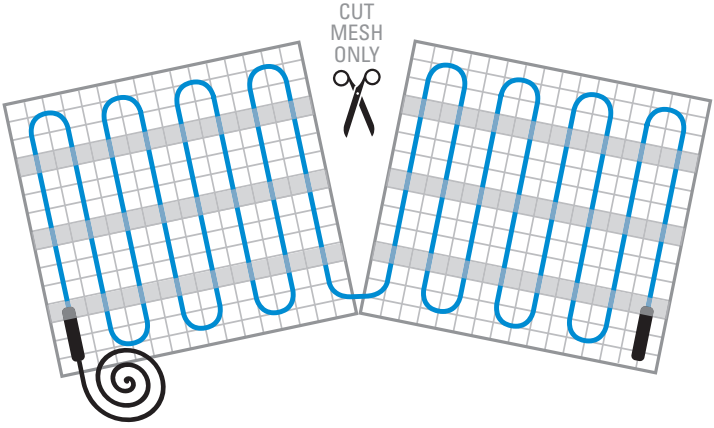
3 Lay the conduit in the groove, previously cut in the floor.

Important! Seal the end of the conduit with, for example, insulating tape to protect against tile adhesive oozing inside the pipe and damaging the temperature sensor.

Now start fixing the mat

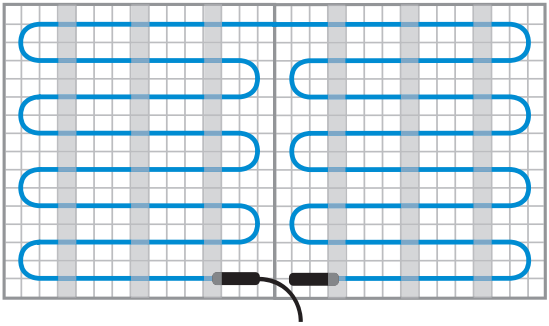
1 Spread the mat out on the floor in such a way as to avoid fixed furniture, such as a bathtub, a shower, a toilet, standing cabinets without legs...

Note: In order to adjust the mat to size and shape of the 'free' floor surface, you can cut the mesh, to which the heating cable is fixed.



Remember!
You must not damage the heating cable. You must not cut it!

Where the mesh is cut, you must carefully straighten the loose cable and place the cut mat sections close to each other. Keep equal distances between heating cables.



Important: Lay the mat in such a way as to allow the supply cable (cold tail) to reach the thermostat.

Note: The temperature sensor has to be placed at an equal distance between heating cables on the mat.

Important: After laying the mat on the base, check the resistance of the core with an ohm meter, and the insulation resistance of the core

with a megohmeter. Note the result. After covering the mat with flexible tile adhesive or with self-levelling compound, you must measure the resistance again. It is necessary to make sure that the mat is not damaged during installation works.

2 Prepare a plan indicating the mat layout and position of the floor sensor. Keep the drawing in order to facilitate, if necessary, locating the heating mat and the temperature sensor in the future. Photos are also useful.

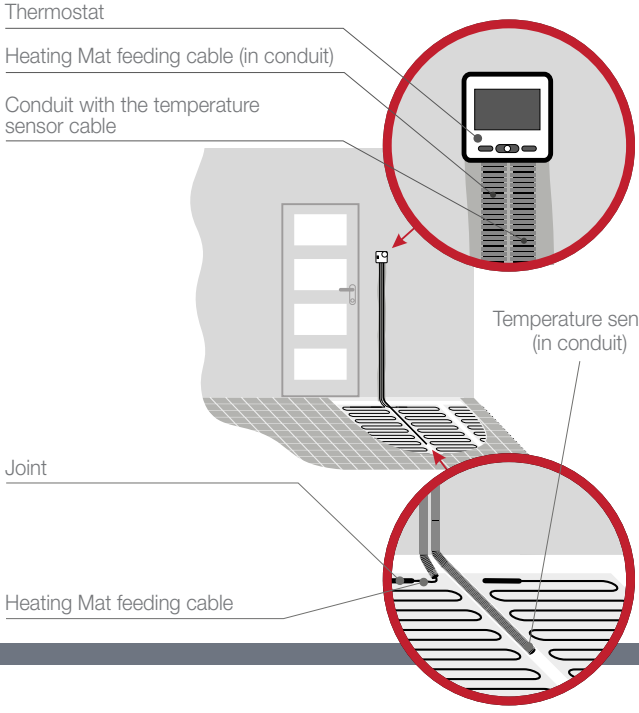
3 Once the mat is fixed to the base, coat it with a layer of flexible tile adhesive or self-levelling compound.

Very important: The cable of the heating mat should be covered with a 3mm layer of tile adhesive or self. levelling compound.

Important: The joint between the heating cable and cold tail should be embedded in the flexible tile adhesive or self-levelling compound.

After the mat has been installed

1. Wait until the adhesive is dry.
2. Insert the cold tail cable into the installation box (through the conduit) you may shorten the cold tail cable length, if necessary.
3. You'll again need to measure the resistance of the core, and the insulation of the heating cable. Compare these results with the initial values and note the results.



Remember!
If there's more than one heating mat installed in one room, all the supply cables (cold tails) must lead to the thermostat / installation box.

Connecting the heating to the mains

Important: Leave this task to a qualified electrician.

Remember!
The connection of the heating mat should be done through the thermostat - see thermostat instructions.
The protective cable (green-yellow) must be connected to the protective cable of the electric installation (green-yellow).

Earth leakage protection

The power supply should be equipped with an RCD (Residual Current Device) with ≤30mA sensitivity.

Switching on the heating system

Important: Only switch the heating system on once the tile adhesive/ self-levelling compound/grout has completely dried as per the manufacturers specification.

Your task:
Set the desired temperature on the thermostat.

Some helpful advice

Avoid making any changes in furniture layout. This could affect the output of heat from your mat. Do not put objects with large surfaces touching the floor (mattresses, cabinets) where the mat has been installed. If you need to drill holes, refer back to your layout first to avoid damaging the heating cable.

The guarantee card

The manufacturer provides a 20 year guarantee for FLEXHEAT underfloor heating mats. Thermostats are guaranteed for 2 years from the date of purchase.

The guarantee conditions

1 In order to have the submitted claim acknowledged:

- the installation of the heating mat should comply with the installation instructions
- the connection of the heating mat and thermostat, along with all measurements of the cable core and insulation resistance readings should be undertaken by a qualified electrician.
- the electric installation, supplying the heating circuit, should be equipped with an RCD
- a plan of the FLEXHEAT underfloor heating mat layout should be submitted
- the properly filled guarantee card (with product label) should be submitted

2 The guarantee does not cover defects, caused by:

- mechanical damage
- improper power supply
- incorrect installation

3 Regarding the guarantee, the manufacturer is obliged to incur costs, connected exclusively with the repair or replacement of a defective heating mat.

Guarantee Card

Your guarantee commences on the date of purchase.
This card must be retained for the duration of the the guarantee.

Installation address			
Address			
Town		Postcode	

Any claim must be accompanied by this guarantee card & proof of purchase.

Details of installer / Electrician					
Name				Professional body enrolment number	
Address				Email	
Town		Postcode		Tel	Fax

Heating core and insulation resistance	
After heating mat insulation, before floor insulation	Ω
	MΩ
After floor insulation	Ω
	MΩ

Caution: The measurement results of the heating core and insulation resistance should not vary from the one given on the nameplate with more than -5% and +10%. Resistance of the heating wire insulation should be at least 10 MΩ when measured with a megaohmmeter (Insulation resistance tester) with a rated voltage of 1000V.

Date	
Installer's signature	
Product label	

The electrician carrying out the electrical connections / insulation must provide a test certificate.

Sketch of heating layout

003/APRIL24

FLEXHEAT ADEPT

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