Safety Guidelines

IMPORTANT
This installation manual has been designed for your safety. For a successful installation please make sure you have understood the guidelines and adhered to all the instructions.

Flat bottomed furniture MUST NOT BE placed over areas where the heating mat/cable is installed as this can restrict airflow to the floor, causing thermal blocking, and in extreme cases may lead to the cable overheating causing a possible fire hazard. This also includes rugs, bean bags, or any item which has a top value greater than 2.5.

The supplied Commissioning Record MUST BE completed, including a floor plan sketch, to indicate heated areas, which must be permanently fixed in or near the distribution/fuse board as required by the 18th Edition BS7671 amendment 3.

- MATTRESSES
- BEAN BAGS
- ANIMAL BEDS
- RUGS
- FLAT BASED FURNITURE

Mat System

INSTALLATION MANUAL

Premium Underfloor Heating Products

- Strong cable
- Compliant to latest IEE regulations
- UKCA approved
- Lifetime warranty

Full lifetime warranty.

Floor heating mats come with a full lifetime warranty.

The warranty does not cover installations made by unauthorized persons or faults caused by incorrect design by others / misuse /damage caused by others / damage in transit / incorrect installation and any other subsequent damage that may occur. Replacement will be fully chargeable if the damage is because of any of the above reasons.

Do's and Dont's for Installation

- ✓ **Do** read through these instructions carefully before beginning work.
- ✓ **Do** use flexible adhesives and grouts.
- ✓ **Do** test the cables before tiling.
- ✓ **Do** be careful not to damage or dislodge the cable during tiling.
- ✓ **Do** ensure the cable is spaced no closer than 50mm between loops.
- ✓ **Do** wait at least 7 days before turning on the system.
- ✓ **Do** read the separate installation and operating instructions for the thermostat.
- ✓ **Do** ensure the joint between the cold tails and heating cable is beneath the tiles.
- ✗ **Don't** attempt to cut the heating cable at any point.
- ✗ **Don't** allow the wires to cross or touch.
- ✗ **Don't** allow excessive foot traffic over the wire before tiling.
- ✗ **Don't** cut tiles over the heating cable.
- ✗ **Don't** place tools or stacks of tiles on top of cable.
- ✗ **Don't** place any product over the floor covering that has a higher top value than 2.5.
- ✗ **Don't** place any bean bags or food furniture over the floor covering.
- ✗ **Don't** place cable closer than 100mm near any pipes.
- ✗ **Don't** turn on the heating mat/cable while it is rolled up or still on the drum.
- ✗ **Don't** tape over the end joint or the cold tail joint.

IMPORTANT

Please ensure that the cold tail joint (the join between the heating cable and flexible supply lead) is fully encapsulated in adhesive or levelling compound underneath the floor covering.

Please ensure that the end joint (the join at the end of the cable which is black) is also fully encapsulated in the adhesive or levelling compound underneath the floor covering.

Both the cold tail joint and end joint MUST NOT be covered with tape, this can cause the cable to overheat and eventually fail

DO NOT BEND THE COLD TAIL JOINT AT ANY POINT.

This instruction manual must be read entirely before commencing. It contains the information to ensure the safe install and operation of our mat/s.

These instructions are not intended to replace the floor covering manufacturer instructions for the floor covering manufacturer but compliment them.
If in doubt please contact the floor manufacturer or us before proceeding with the installation.

The cable and joints on the mat are very strong, however care should be taken once the mat has been removed from the box.

Contents

- INSTALLATION NOTES 5
- INSTALLATION & TESTING 6
- INSTALLATION INSTRUCTIONS 7
- MAT RESISTANCE VALUES 9
- DO'S AND DON'TS 13
- WARRANTY 14

CE approved
All our heating cables are CE approved and have been designed to conform to the current regs – 17th Edition Part P compliant.

STEP 11

Test the heating cable as before,plus carry out 500 DC Volt Insulation resistance test to ensure the cable isn't damaged.

STEP 12

If possible cover the cables with a thin layer of suitable latex based levelling compound (5-6mm)

This will help protect the cables when tiling. You may tile directly over the cables, however extra care must be taken not to dislodge the cables or to damage the cable in anyway.

If you are using a vinyl floor covering, then a minimum 10mm self-smoothing compound should be used to cover the mat. **PLEASE CONSULT VINYL FLOOR INSTALLERS BEFORE INSTALLING** the compound for suitability with the floor covering.

If using carpet as a finish floor covering, then a 10mm self-smoothing compound can be used with a suitable low tog underlay (please check with manufacturer for suitability).

NB THE CARPET AND UNDERLAY MUST NOT EXCEED 2.5 TOG COMBINED.

You can now lay your flooring according to your floor manufacturer's instructions. Please refer to the floor manufacturer's instructions for the curing time before laying the floor covering, this is usually around 7 days, the floor temperature should be increased gradually by 5 degrees per day over a 2 week period to reduce the risk of force drying. If in any doubt please check with adhesive/latex manufacturers for advice.

STEP 8

Check and record the insulation resistance value and the cable resistance value. Please check if these values are consistent with pre-install values.

STEP 9

Depending on the mat supplied the cold tail from the cable has an earth which is a braided wire or sold earth cable, if it is necessary to shorten the cold tails, at the thermostat, then the earth braid must be 'unpicked' with a small screw driver or similar tool.

IT MUST NOT BE CUT ALONG ITS LENGTH as this will cause it to become unravelled, It should then be twisted back together and connected to the incoming earth on the power supply.

STEP 10

Position the sensor in the black conduit supplied from the thermostat position down in between two runs of cable (not overlapping the heating cable), the sensor should be positioned approximately in the middle of the run to allow the conduit to be placed inside. If installing directly onto plywood then a groove can be cut using a sharp chisel (loosen of pipes). The joint between the heating cable and the cold tail can also be placed inside a groove in the floor as this can be bulky and difficult to tile over, The sensor wire can be extended if necessary, if you need to cut the sensor wire you must only cut the end with the exposed wires.

DO NOT cut the end which contains the plastic sensor. The connections to the thermostat can now be made.

PLEASE READ THESE INSTRUCTIONS PRIOR TO STARTING INSTALLATION

Our Mat system has been designed to be installed below most tile or stone floor coverings.

It may also be installed below engineered wood/laminated or vinyl floor coverings providing the heating mat has been covered with a 10mm layer of flexible self-smoothing compound, any underlay used for engineered wood or laminate floor covering must be a suitable low tog underlay product compatible with underfloor heating.

Contents Of Kit

Mat or Mats (with a twin core heating cable attached to the mat)

Installation Notes

- The heating mat/thermostat requires a main switched fused spur supply via a residual isolation point on an RCD protected circuit and must be installed by a suitably qualified person.

THE wiring must conform to BS 17th Edition Part P regulations.

- The mat can be either 100/150 watts per square metre.
Please see page 9 for the Resistance Values for each type.

NEVER OVERLAP THE MATS (THIS WILL CAUSE THE HEATING ELEMENT TO FAIL)

- The cold tail on the mat is black and this is a three-core cable live – neutral – earth, The live and the neutral are connected to the heating element/cable and the earth to the incoming supply earth.
The heating element on the mat is the Yellow Cable, and this is a double insulated cable.

For larger areas two or more mats can be supplied.
Two cold tails can usually be connected at the thermostat, if not then the cold tails need to be terminated within a wall mounted accessible junction box, (NB max load on one thermostat is 16 amps).

Do **NOT** cut or attempt to shorten the Yellow Heating Cable.

- The joint between the cold tail and the heating cable must be below the floor covering and fully encapsulated in self smoothing compound or tile adhesive, The joint must not be bent or stressed in any way. The cold tail joint and the end joint must **NOT** be taped over this will cause the joint to fail and invalidate the warranty

- The mat system is suitable for installing on a solid floor which is sound and suitable for tiling.

- The system is suitable for installing on any subfloor which is suitable for tiling including timber, MDF, sand & cement screeded floors, plywood or cement faced tile-backer boards.

- Do **NOT** use on directly onto timber floorboards, MDF or hard board because movement in the boards can cause them distort, causing the floor covering to move/dislodge or crack.

NB If installing on a newly screeded or concrete floor, the screed must be left to cure for 21 days, cured (this is typically 1mm a day of depth of screed/concrete ? .)Unless an accelerator has been added to the screed/concrete.

STEP 7

When you reach the end of the room the mat can be cut as shown here.

DO NOT cut the cables.

COLD TAIL AND END JOINT INSTALLATION
When installing the heating mat you need to be careful with how you install the end joint and cold tail joint (the join between the supply lead and the heating mat), They can potentially overheat if the following steps are not taken.

As the joints on the heating mats are a much larger diameter than the heating element it is inevitable that you will need to cut a small channel or groove for them to sit into the subfloor or the insulation board.

Once they have been installed in this groove it is important that you do not cover them with tape, this will create an air-void preventing the joint from dispersing its heat, this can lead to a potential failure.

The cold tail joint can be secured in place by taping the cable either side of the joint, a small piece on the heating cable and a small piece on the cold tail, This will ensure the joint is NOT covered with tape.

The end joint can be secured in place by taping the yellow heating element just before the joint to help secure it in place, This will ensure the joint is NOT covered with tape, Both these heating joints MUST now be fully encapsulated within levelling compound and/ or tile adhesive.

Resistance Values

Mats 100W/m²			
AREA TO BE HEATED (m²)	Power (W)	LOAD (A)	RESISTANCE (Ω)
1	100	0.43	529.00
1.5	150	0.65	352.67
2	200	0.87	264.50
2.5	250	1.09	211.60
3	300	1.30	176.33
3.5	350	1.52	151.14
4	400	1.74	132.25
5	500	2.61	88.17
6	600	3.48	66.13
7	700	3.48	66.13
9	900	3.91	58.78
10	1000	4.35	52.90
12	1200	5.22	44.08

Mats 150W/m²			
AREA TO BE HEATED (m²)	Power (W)	LOAD (A)	RESISTANCE (Ω)
1	150	0.65	352.67
1.5	225	0.98	234.44
2	300	1.30	176.33
2.5	375	1.63	141.07
3	450	1.96	117.56
4	600	2.61	88.17
5	750	3.26	70.53
6	900	3.91	58.78
7	1050	4.57	50.36
8	1200	5.22	44.08
10	1500	6.52	35.27
12	1800	7.83	29.39

Installation By Qualified Person

Any electrical installation presents a risk of fire or electrical shock which can result in personal injury.

Only a qualified person should test and connect the installation and install back boxes for fused spurs and thermostats.

This is to ensure all work conforms to current regulations.

DUE TO THE REQUIREMENTS OF THE CURRENT IEE REGULATIONS PART P ONLY A QUALIFIED PERSON SHOULD TEST AND MAKE THE FINAL CONNECTIONS TO THE INSTALLATION.

Electric underfloor heating systemsmust be controlled via an RCD protected circuit, For a fixed installation, this must be via a fused spur or spur that has contact separation in all poles can be used.

For systems larger than a 13 Amp system a suitably rated contactor may be complex with regulations must be used.
It is sometimes required that suitable contactor is used which is controlled by the thermostat.

IF IN DOUBT PLEASE CONTACT US

IMPORTANT
Installations must be in accordance with PART P of the
CURRENT IEE regulations...

When installing thermostats for a bathroom, they must be fitted in a suited outside of the bathroom and use the floor sensor (probe) that is provided with the thermostat.

Testing

Each mat is carefully tested prior to shipping however it must be tested as follows:

1. After unpacking and prior to installation
2. At this point installing electrician must carry out a 500 Volt DC Insulation resistance test
3. Once you have installed it on the subfloor
4. If a smooth levelling compound has been used test again prior to the final floor covering

A simple electrical test can be done with an ohm metre and can be within 10% plus or minus of the value shown on the table on Page 9 (measured at a room temperature of 20 degrees.) This is to make sure the ohm resistance is what it needs to be, NB hot or cold conditions can cause the resistance to alter.

Installation Instructions

STEP 1

Ensure the subfloor is solid, suitable for tiling and free of dust and debris. Timber floors must be covered with suitable tile backer board, minimum 9mm ply or suitable tile backer boards.(PLEASE CONTACT FOR ADVICE IF YOU ARE UNSURE)

Do not use XPS boards on a timber subfloor.
Bitumen coated floors must be covered by a tile backer board or 3 to 5 mm of a self-smoothing compound that is suitable to cover bitumen.

Do not install a cable or mat onto a bitumen covered surface.

STEP 2

Prime the floor with acrylic based primer Leave to dry, typically 1 to 2 hours dependent of air temperature. Avoid excess foot traffic on primed surface.

Always check that the self-smoothing compound and tile adhesive are compatible with the primer (read on) but if in doubt check with the manufacturer of the self-smoothing compound and adhesive.

STEP 3

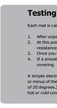
If using tile backer boards or XPS insulation boards, do so in accordance with manufacturer's instructions.

Fix the boards in a brick bond fashion. Either fix the boards with a cement-based tile adhesive or screws and washers. Fix the screws at a maximum 300mm centres dependent on the subfloor.

STEP 4

At this point please refer to the testing procedure on page 6 as it is very important that the testing is carried out,

STEP 5



Prepare floor plan of the area to be heated and identify suitable location of the fused spur and thermostat position - mark the layout of the underfloor heating mats on the floor plan, This is an important step and must be carried out correctly to ensure that all the mat is used up, Once a mat has been unrolled it can not be returned.

STEP 6

Now start installing the floor heating mat from the thermostat position, Roll out and secure the mat to the floor, The heating mat has a sticky mesh, simply remove the protective paper and stick to the floor, Starting at the wall, unroll the mat 90 degrees upside down,you can use the double sided adhesive strips to hold the mat in place, A small amount of additional cloth tape is provided to ensure the mat is flat to the floor in places where it is uneven.

DO NOT use excessive long strips of tape along the edges of the heating mat /s as this can cause problems with adhesive/latex bonds, please ensure any tape used is primed with suitable primer before applying adhesives/latex.

The floor heating mat should be between 50-100mm from the wall perimeter, and 50-100mm from any fixed appliances such as kitchen units, The mat/s can be removed from the mesh matting and placed loose on the floor to suit the shape (fix with minimal dust tape to hold in place), at no point must the cable be spaced closer than 50mm between any 2 loops of cable.