



Bush Nelson Ltd
Stephenson Way
Three Bridges
Crawley
RH10 1TN

EHM Heater Mats

INSTALLATION AND OPERATING INSTRUCTIONS

Before starting installation read these instructions and the following 'Frequently Asked Questions' thoroughly. Retain the instructions for reference.

1. Personnel.

EHM heater mats should be installed by a suitably qualified, professional builder and/or electrician. EHM is not a 'do it yourself' product.

It is most important that the installer completes the Installation Record Form that forms part of this booklet.

2. Check the suitability of sub-floor.

EHM heater mats are usually installed onto a concrete sub-floor. If you intend to install EHM heater mats onto a wooden sub-floor, we recommend a fire resistant layer be installed between the cable and the sub-floor. This could be 6mm thick compound or foil backed insulating board. We do not recommend installation onto asphalt sub-floors or any insulation material other than rigid boards.

3. Check the suitability of the tile adhesive.

EHM heating mats are designed to sit in a layer of adhesive below ceramic or stone tiles. EHM has been used with a wide variety of tile adhesives. We suggest that the suitability of any given adhesive be confirmed by the adhesive supplier.

4. Check the suitability of the floor surface.

EHM is suitable for use with ceramic and stone floors, including slate and marble. It should not be used with surfaces such as wood and vinyl or under carpeted areas.

5. Check that you have the correct EHM mat.

Firstly you must calculate the area of floor to be heated. This will be the total floor area minus the area occupied by fixtures such as cupboards, sinks, baths etc. Refer to the schedule of EHM mats to find the mat with a square area slightly lower than your calculated figure. This is likely to be the mat for you.

To double-check your selection, draw a sketch of the free area. Leaving a space of 50mm between mat runs and 80mm between the mats and the wall, draw the mat runs onto your sketch. Remember you can cut the mat at any point along its length but you cannot alter its width.

If you are unsure whether there is quite enough space to install a particular EHM mat you should consider using a slightly smaller mat. Remember although you can cut the mat at any point you must not cut the heating cable.

6. Check the suitability of the controller

There are 3 controllers in the EHM range. All have a maximum switching capacity of 16A. For installations involving a number of mats more than one controller may be required.

When EHM is used in a bathroom it is usual practice to mount the controller outside the room with the controller probe in the bathroom floor. For this reason the HMC-3, which has a built-in air temperature sensor, should not be used.

7. First electrical check

Before starting installation and before unrolling the mat, the resistance of the cable should be measured and recorded on the Installation Record Form. Ensure that the reading taken is consistent with the nominal output of the cable.

An insulation resistance reading should also be taken between either end of the cold lead conductor and the earth braid using a 500V dc Insulation Resistance Meter (Megger). Readings in excess of 20 meg-ohms are acceptable. Again the reading should be recorded on the Installation Record Form

NEVER APPLY POWER TO THE CABLE WHILE IT IS ROLLED UP

8. Check and preparing the sub-floor

Ensure that the surface of the sub-floor is clean and free from any debris or sharp objects and suitable primer should then be applied.

9. Cutting a groove for PVC pipes

Both the controller probe and cold lead should be run through a plastic pipe of an appropriate diameter (typically 10mm diameter plastic hose). This is particularly important where the probe or cold lead pass from the floor to the wall. To keep the floor level as low as possible, grooves can be cut into the sub-floor to accommodate these pipes.

10. Positioning the controller probe

The controller probe should be mounted in a plastic pipe. The end of the probe should be a minimum of 500mm from the wall and 30mm from a heating cable. Remember to seal the end of the plastic tube with tape to prevent ingress by the adhesive.

11. Laying the EHM mats

An EHM mat has four strips of tape running along its length. The two outside strips are double sided and these should be used to fix the mat to the primed sub-floor with the cable side up.

At this stage it is good practice to take a photograph of the floor. This will be a useful record should you need to carry out any work on the floor (for example drilling holes).

The tile adhesive can then be applied in the normal way taking care to ensure that the heating cable is completely covered and surrounded by the adhesive. Before applying the tiles and before the adhesive dries, carry out the second electrical check (see below).

It is essential to avoid mechanical damage to the heating cable. If it is impossible to avoid walking on the cable, use soft-shoes and/or crawling boards.

When you have finished laying the mat, you simply stop. There is no requirement to return the end of the cable to the connection point.

The hot/cold junction must be in the floor itself and not in free air.

It is most important that the cables are not allowed to touch or cross.

12. Second electrical check

Once the mat has been laid onto the sub-floor and before the adhesive dries, the following checks should be performed. All results should be recorded on the Installation Record Form

- a. Ensure that the resistance reading (ohms) is as recorded after the first electrical check
- b. Measure the insulation resistance between either end of the cold lead conductor and the earth braid using a 500V dc Insulation Resistance Meter (Megger), ensure that the insulation resistance is still in excess of 20 meg-ohms.

13. Apply the tiles

14. Third electrical check

Once the tiles have been applied, the following checks should be performed. All results should be recorded on the Installation Record Form.

- a. Ensure that the resistance reading (ohms) is as recorded after the first electrical check
- b. Measure the insulation resistance between either end of the cold lead conductor and the earth braid using a 500V dc Insulation Resistance Meter (Megger), ensure that the insulation resistance is still in excess of 20 meg-ohms

16. Electrical connection

The electrical connection instructions supplied with the controller should be followed. All controllers in the EHM range have a 16A switching capacity. It is essential that the total load controlled by a single controller does not exceed 16A.

17. Energising

The system should not be energised within 28 days of the floor surface being laid. To do so may damage the heating cable.

18. Warranty

Assuming correct installation, EHM will give many years of satisfactory service. In the unlikely event of a malfunction resulting from faulty manufacture, Warm Tiles is guaranteed for 12 months from date of purchase. The guarantee covers the full purchase price but not the cost of repairing or replacing the heating mat in the floor.

An Installation Record Form is supplied with each mat. This should be completed at the time of installation and posted to Bush Nelson within 60 days of installation. Warranty claims will not be considered if the form has not been returned to us within the required time.