

# Gaia Dry Installation Guide



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# Thank you for investing in our Gaia underfloor heating system



In this instruction manual you will find important information regarding the installation of your underfloor heating system. Please follow the step by step instructions, ensuring complete care is taken. Check with the floor manufacturer if you have any doubt about the suitability of laying our heating mat/s under your floor covering.

All our underfloor heating mats come with a 10 year warranty. Please register your product within 30 days from completion of installation, using our warranty registration form, which can be found at [www.gaia.co.uk](http://www.gaia.co.uk).

This warranty is only valid if installed by an IET 17th Edition qualified electrician/electrical contractor. The installation must conform to Part P of the Building Regulations 2005. For full terms and conditions relating to our warranty please visit our website [www.gaia.co.uk](http://www.gaia.co.uk).

Please note: The warranty does not extend to costs of relaying, replacing or repairing any floor covering or floor. The warranty is not valid if faults are caused by damage, incorrect installation or mis-use.



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#### **INSTALLATION TIPS**

Insulation in the floor affects both the floor heating system and heating costs. We recommend you install suitable insulation in the floors, whether it is a small space such as a bathroom or a larger area where the floor heating system will be used as the main heating source.

The system must be connected by an approved electrician as per IEE 17th Edition wiring regulations and the installation conforms to Part P of the Building Regulations 2005.

Thermally restrictive items must not be installed onto underfloor heating in a way where heat can become trapped. Possible examples of thermally restrictive items could be heavy rugs, bean bags or any item which restricts airflow and has a tog value greater than 2.5.



## Dos

- ✓ **DO** read through the instructions carefully before beginning work
- ✓ **DO** space the mat evenly across the floor to produce a uniform heat output
- ✓ **DO** ensure that the whole heating wire (including black joint) is fitted beneath the floor finish
- ✓ **DO** ensure your floor base has no sharp debris or objects such as nail heads protruding before beginning your installation
- ✓ **DO** install the mat beneath floating laminate floors and engineered board
- ✓ **DO** ensure there is a gap of at least 2cm between each run of heating mat
- ✓ **DO** use a multi-meter to test each heater before, during and after covering with the final floor finish
- ✓ **DO** connect multiple mats in parallel to the electrical supply and ensure that both earth leads for each heater are connected to the earth ring
- ✓ **DO** draw out your plan, as to where to place your mats before commencing installation and do remember two leads have to be connected to the thermostat for each mat
- ✓ **DO** consider additionally insulating your sub-floor before installing the underfloor heating system
- ✓ **DO** ensure the system is protected by a suitable dedicated RCD (30mA)

## Don'ts

- ✗ **DON'T** cut, shorten, strain or cross the heating cables
- ✗ **DON'T** bend the joint between the heating cable and the black cold tail
- ✗ **DON'T** turn on the system to maximum temperature once the floor covering is down, you should increase the temperature of the system slowly over a course of weeks
- ✗ **DON'T** lay the system so that any cables are closer than 3cm to each other
- ✗ **DON'T** place mats closer than 10cm from thermally conductive items such as walls, metal pipework or drains
- ✗ **DON'T** install the system beneath floor coverings with a thickness greater than 18mm
- ✗ **DON'T** install the system directly beneath a wooden floor finish that has to be glued and screwed in place or mechanically fixed into position in any way
- ✗ **DON'T** walk unnecessarily on the heating system during installation
- ✗ **DON'T** place thermal blocks onto your finished floor covering above your heated floors when they are in use. Such items include bean bags, thick rugs or floor flush furniture
- ✗ **DON'T** install the system if the ambient temperature is below 5°C as the cables can become less flexible
- ✗ **DON'T** install the floor temperature sensor close to other heat sources such as hot water pipes
- ✗ **DON'T** turn on the heating mat/cable while it is rolled up or still in the drum

# Installing the GaiaDry Mat

## Step-by-step guide

### Tools required:



1

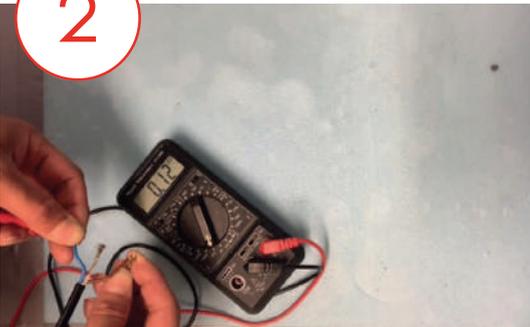


**1.** Before installation, the subfloor must be clean, dry, level and all protrusions removed. Lay the Gaia-XPS insulation, ensuring the whole floor is covered. To prevent movement, fasten with tape, DO NOT use any type of spray adhesive to stick the insulation down.

Gaia only recommends the use of Gaia-XPS insulation with GaiaDry. A conduit should be installed in the floor for the floor sensor, this allows easy removal in the unlikely event of the sensor failing. Placed at least 50cm from the wall and installed between two heating cable loops, the conduit must not cross any heating cables.

It may be necessary to chase out the insulation and subfloor to accommodate the conduit without increasing the overall depth of the heating system.

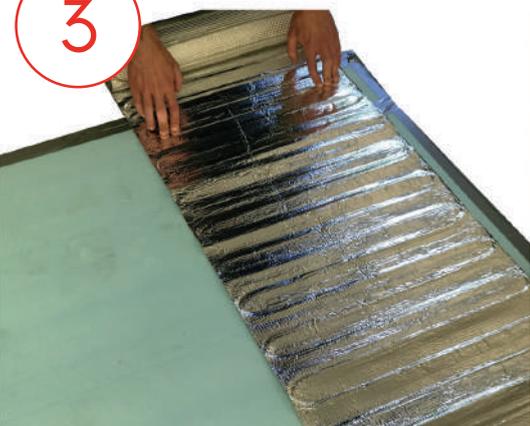
2



**2.** At each stage of the installation it is recommended you test your GaiaDry heating mat for the following:

The resistance should be checked between live and neutral using a multimeter and should match the resistance reading set out on page 7 of this manual. The insulation resistance of the heating cable must also be checked using an Insulation Resistance Tester to check the integrity of the Earth. Ensure you make a note of the resistance values on the commissioning certificate supplied.

3



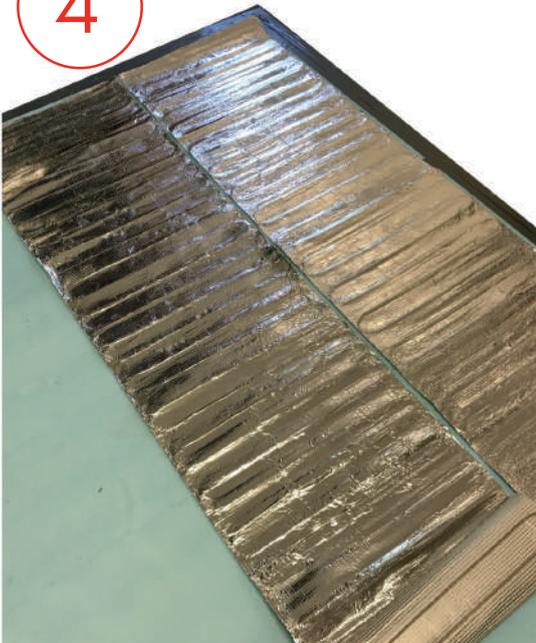
**3.** Place the cold tail of the mat at the connection point and begin to lay out the heating mat, leaving a minimum 20mm gap between the foil on each run and staggering heating cable loops. You may need to chase the connection leads into the Gaia-XPS insulation to ensure the depth of the system isn't increased.

Unroll the heating mat with the shiny aluminium always kept uppermost, making sure the mats do not overlap one another. To prevent damage, avoid stepping directly onto the heating mat or the cold cables. If necessary, temporarily use extra insulation to protect the heating mat (this must be removed prior to installing floor covering).

## Installing the GaiaDry Mat

### Step-by-step guide (continued)

4



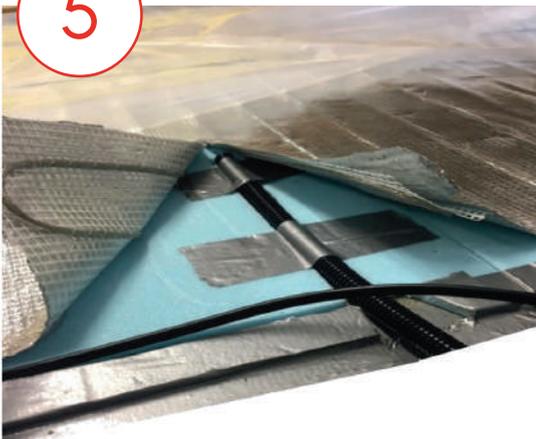
**4.** When you reach the end of each strip of heating mat, carefully cut the mat by cutting the mesh and foil (NOT THE HEATING CABLE) and turn the mat, positioning the next piece beside the first.

If you need to run the cable loosely to cover odd areas, ensure the cables are always covered in the foil backing and are spaced no closer than they are on the heating mats. Use gaffer or duct tape to fix the mat down where necessary. Ensure the tape does not cover the heating element, only the foil.

Once the mat is installed you may need to chase the end return of the mat and the connection point between the heating element and cold-tail into the insulation as these connections are slightly thicker than the heating mat.

After fitting, measure the resistance value of the mat again. Use the same procedure as step 2 - again making a note of the values on the commissioning certificate.

5



**5.** Install the floor sensor in the conduit, tape the conduit to the insulation and tape the end of the conduit to ensure the sensor does not protrude. Ensure that the end of the sensor is equidistant between two loops of heating cable.

Cover the heating mat with the Gaia 500G polythene sheeting - the joints of the sheeting must overlap by at least 20cm. The overlaps can be sealed over their total length with tape.

When the heating mat has been completely laid and tested and the cables are connected to the thermostat, the floor finish can be fitted.

Under no circumstances should insulation be fitted on top of the heating mats.

6

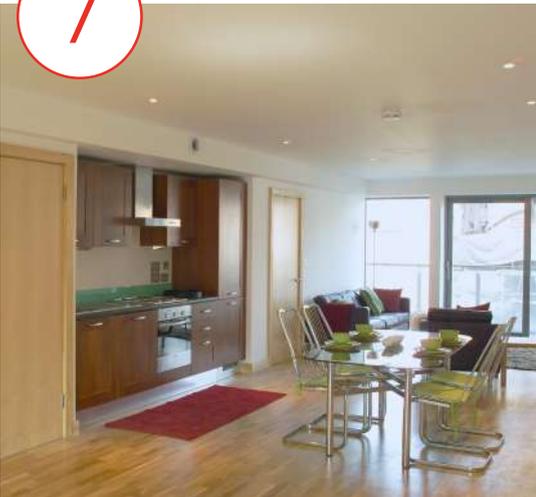


**6.** The floor finish can now be installed. Always install the floor finish in accordance with the manufacturers requirements. Ensure the flooring is suitable for use with underfloor heating and has been acclimatised to the room following manufacturers guidelines before installing. Leave room for expansion around the edge of the room if the flooring manufacturer states this is required.

During the installation do not step directly on the heating cable where possible.

After covering the mat, measure the resistance value of the mat again. Use the same procedure as in step 2 - then make a note of the values on the commissioning certificate.

7



**7.** Once completed, the final connection of the thermostat can be made. Please refer to the specific thermostat installation instructions.

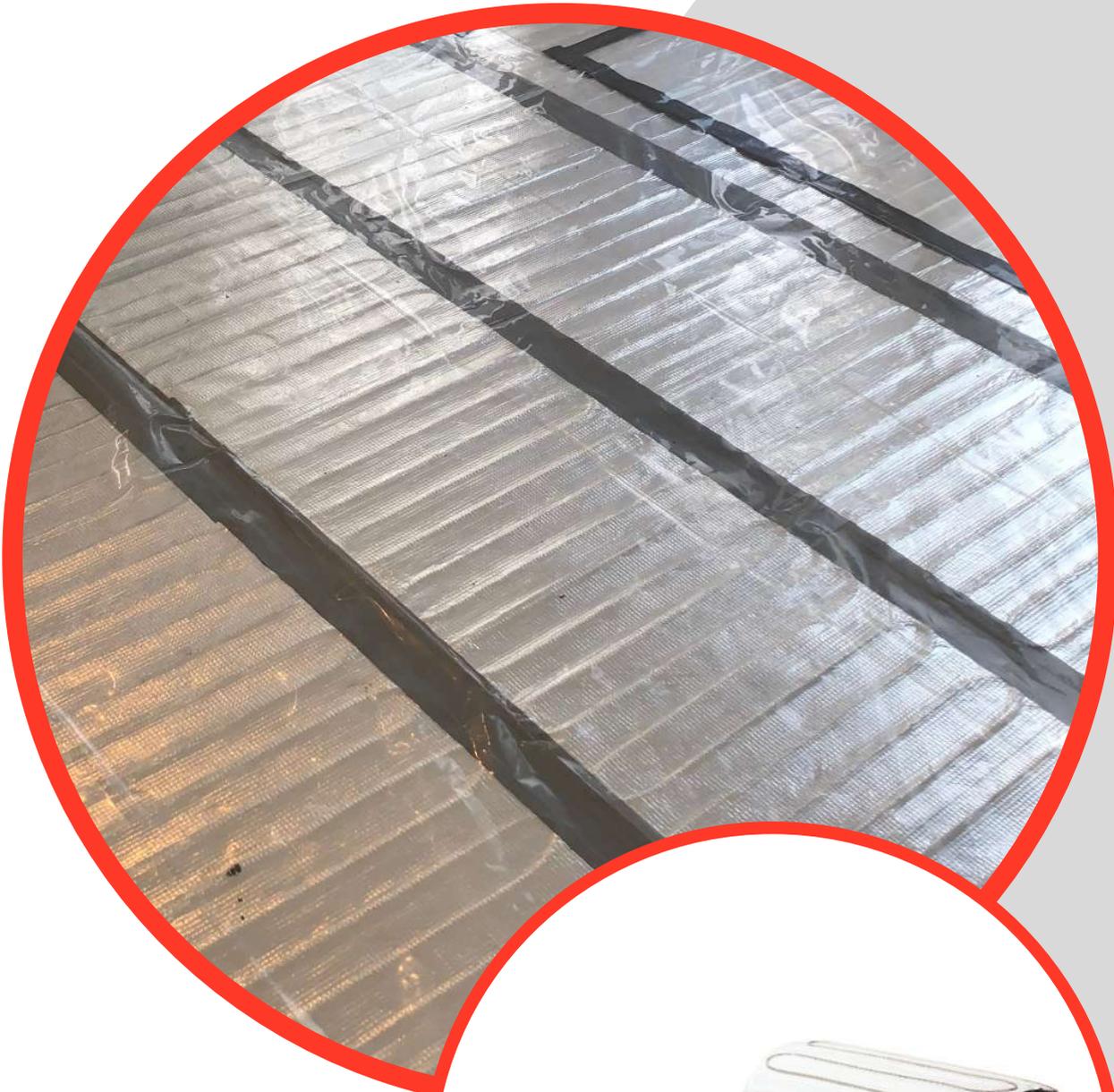
You **MUST** complete the supplied commissioning certificate, including a floor plan sketch. This must be permanently fixed in or near the distribution/fuse board.

Ensure the maximum floor temperature is set on the thermostat to the flooring manufacturers recommendation.

Please consult the thermostat manual for the procedure on how to do this.

*All electrical works should be undertaken by a qualified electrician.*

Product Code	Mat Area (m <sup>2</sup> )	Output Wattage	Resistance (Ohms)
72140G010	1.0	140	415-359
72140G020	2.0	280	208-180
72140G030	3.0	420	138-119
72140G040	4.0	560	104-90
72140G050	5.0	700	83-72
72140G060	6.0	840	69-60
72140G070	7.0	980	59-51
72140G080	8.0	1120	52-45
72140G100	10.0	1400	42-36
72140G100	12.0	1680	34-30



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