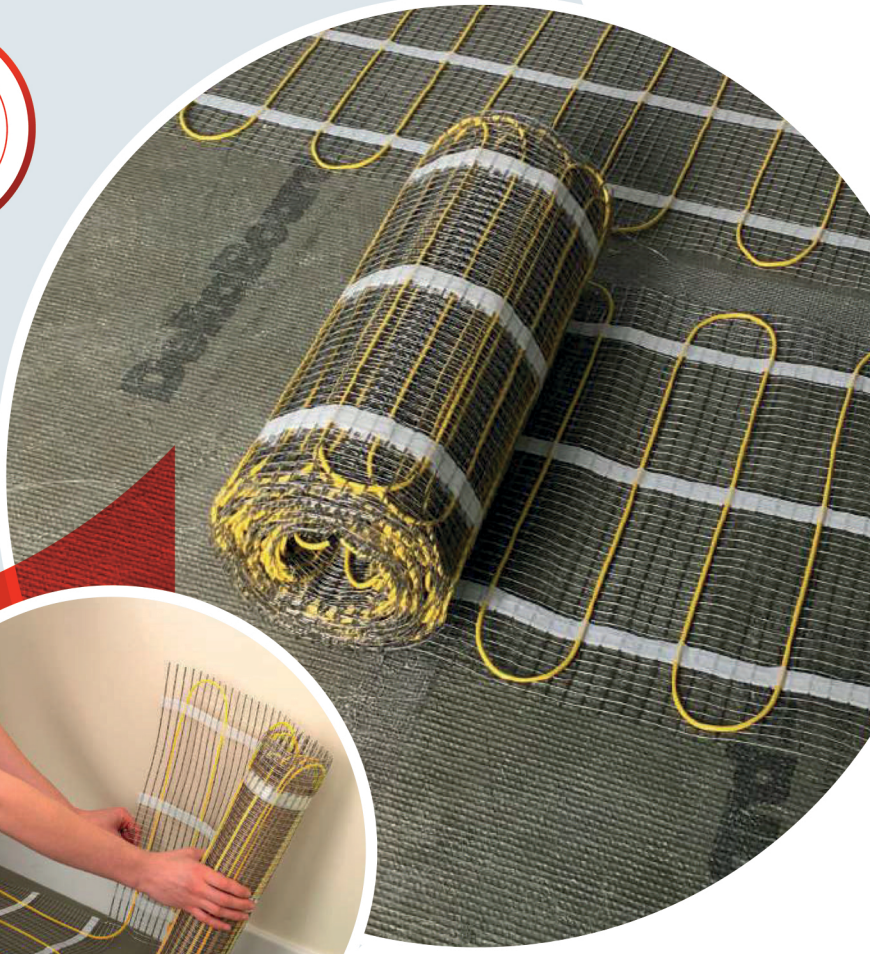
gaia
Underfloor Heating

GaiaMat
Installation Manual

Trust in our Warmth

CELEBRATING 35 YEARS IN BUSINESS





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Thank you for investing in our GaiaMat 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 12 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.

This warranty is only valid if installed by an IEE 18th 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.

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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Do's

- DO read through the instructions carefully before beginning work.
- DO ensure your floor base is clear of debris before beginning your installation.
- DO cover both heating cable and connection joint under the flooring.
- DO check the GaiaMat will fit into the free floor area of the room, prior to unpacking.
- DO test the cable before installing, and then before and after covering the GaiaMat
- DO ensure the GaiaMat is encapsulated in flexible tile adhesive / flexible levelling compound prior to your floor finish being laid.
- DO be careful not to damage the cable at any stage during installation.
- DO check the heat loss if this is to be the sole heat source.
- DO ensure the system is controlled by a thermostat with a floor sensor.
- 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).

Dont's

- DON'T install the GaiaMat across two or more rooms.
- DON'T place the GaiaMat under any fixed furniture such as kitchen units, baths or showers.
- DON'T touch or cross the heating cables.
- DON'T cut the yellow heating cable.
- DON'T lay the system so that any cables are closer than 3cm to each other.
- DON'T install the floor temperature sensor cable close to other heat sources such as hot water pipes.
- DON'T turn on the GaiaMat while it is rolled up.
- DON'T install the system if the ambient temperature is below 5°C as the cables can become less flexible.
- DON'T bend the joint between the yellow heating cable and the black cold tail.

Floor Finishes & Coverings

The underfloor heating system is compatible with most common floor finishes, such as:



Tile / Stone

Fully encapsulate the GaiaMat with either a flexible smoothing compound or flexible tile adhesive, prior to the tile / floor finish being laid. Gaia recommends the use of a plastic trowel when laying tile adhesive, to protect the underfloor heating cable from accidental damage.



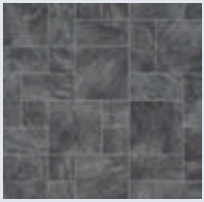
Carpet

Fully encapsulate the GaiaMat within a 10mm bed of flexible smoothing compound, to provide a minimum of 5mm above the top of the heating element., prior to the carpet floor finish being laid. Avoid rubber or foam backed carpets. Please check with the carpet manufacturer to ensure the carpet is suitable for underfloor heating.



Timber

Fully encapsulate the GaiaMat within a nominal 10mm bed of flexible smoothing compound layer, prior to the timber floor finish being laid. When installing natural wood floors it is recommended that soft wood floors should not exceed 20mm in thickness, hard wood floors should not exceed 30mm in thickness.



Vinyl

Fully encapsulate the GaiaMat within a 10mm bed of flexible smoothing compound, to provide minimum of 5mm coverage above the top of the heating element, prior to the vinyl floor finish being laid.

*Floor coverings should not exceed 0.15 m2 K/W (1.5 tog)

Please note that thermally resistive items should not be left or installed onto underfloor heating in a way where heat can become trapped. This trapped heat could cause failure if left without due care or attention. Possible examples of thermally resistive items could be heavy rugs, bean bags or a mattress laid in direct contact with the floor. Some items of furniture that do not allow air flow could also cause concern. If you are unsure please contact Gaia.

Installing the GaiaMat Step-by-Step Guide

Tools required:



1

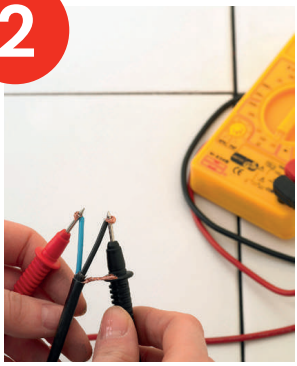


Let's get started

A. Plan: Use your plan to calculate the heated area, working out how to lay the mat evenly across the floor whilst avoiding all floor obstructions and close floor fitting objects (pipes, baths, cupboards). Detail on your plan the location of the cold tail (where the mat starts), floor sensor and connection box. It is acceptable to lay the GaiaMat under suspended cupboards, wash basins and wall mounted toilet pans

B. Once the floor is prepared: Mark the positions of the floor fitting objects that will be installed once the floor is finished, so these can be avoided when laying the mat.

2



Testing your Gaiamat

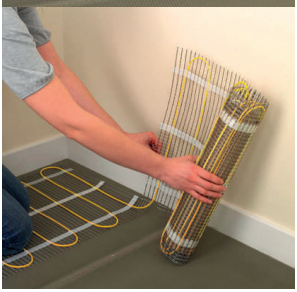
At each stage of the installation it is recommended that you test your GaiaMat for the following:

Continuity. This checks that the heating cable (blue and black wires) are intact and have the correct resistance. Checked with a multimeter, the resistance reading should match the rating on the cold tail label with a tolerance of -5 to +10%. Ensure your multimeter is capable of reading values between 28-800 ohms.

Insulation. This checks that the earth screen around the heating cable has not been damaged and shorted to the heating cables. The test can be made with a multimeter and can be done by testing both the path between the blue cable and the earth screen, and also the black cable and the earth screen - both should read infinity.

3





Preparation

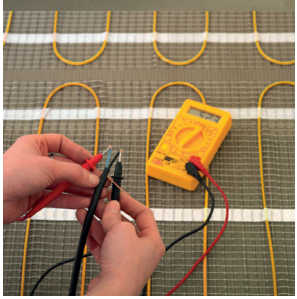
The subfloor must be prepared as normally required for tiling, ensure the installation surface is even, stable, dry, clean and free of sharp objects. When installing onto existing floorboards, it will be necessary to brace the floor with WBP plywood of standard recommended thickness or tile backer boards.

Each mat is supplied with a piece of flexible tubing (only one tube is required for each thermostat), this is to house the floor sensor, so that in the unlikely event that the sensor fails, it can be easily removed and replaced without lifting the floor. The sensor should be laid between two cable loops 15-20cm into the floor, avoiding any heat sources.

In some situations a small channel may have to be made in the floor to accommodate the tubing. If so, cut a channel from the thermostat position approximately 20-30cm across the floor.

4





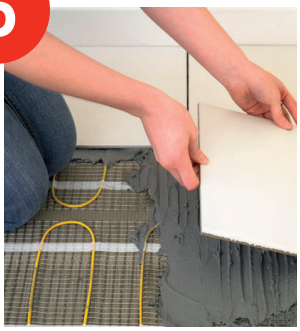
Fitting the Mat

Remove the plastic outer and place the cold tail of the mat at the connection point. The GaiaMat has a self-adhesive backing, lay this towards the floor and roll the mat out, referring to your layout plan. Upon reaching the end of the run, simply cut the grey mesh (NOT THE YELLOW CABLE) and turn the mat, positioning the next piece beside the first.

When cutting and turning the mat ensure there is a minimum 50mm gap between the cable loops. To avoid risk of damage at a later stage do not lay the mat where objects will be put onto or fixed to the floor. After fitting, 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.

Note: If required, the cable can be removed from the mesh and loops formed manually, but ensure the cables are spaced at 75mm (the same distance as those on the mat).

5



Fitting/Final Measurement

The mat can now be covered in one of two methods:

Concrete and wooden floors using flexible tile adhesives

Working with a width of GaiaMat at a time, apply flexible tile adhesive through the mat with a rubber back trowel or similar so that the heating cable is covered, making sure there are no air pockets. Another layer of adhesive can then be applied carefully using a suitable notched trowel to comb the adhesive before applying the tiles.

Concrete and wooden floors using self-levelling compounds

An alternative method is to cover the GaiaMat with a suitable self levelling/latex type compound. This product will find its own level giving you a level surface to then apply a layer of flexible tile adhesive using a suitable notched trowel to comb the adhesive before applying the tiles.

Please note: Other floor finishes can be applied, please see page 5 for more details.

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

For professional guidance refer to your adhesive manufacturers recommendations.

6



Finishing

After the work has been completed the floor must dry completely before the floor heating and thermostat are connected.

This process usually takes 8-10 days, but you should refer to the adhesive and floor finish manufacturers guidelines. To connect the thermostat, please refer to the installation guidelines supplied with the thermostat.

Resistance Values

GaiaMat 100W/m²

Product Code	Mat Area (m²)	Output (W)	Resistance (ohms)
72100G010	1.0	100	529
72100G015	1.5	150	353
72100G020	2.0	200	265
72100G025	2.5	250	212
72100G030	3.0	300	176
72100G035	3.5	350	151
72100G040	4.0	400	132
72100G050	5.0	500	106
72100G060	6.0	600	88.2
72100G070	7.0	700	75.6
72100G080	8.0	800	66.1
72100G090	9.0	900	58.8
72100G100	10.0	1000	52.9
72100G120	12.0	1200	44.1

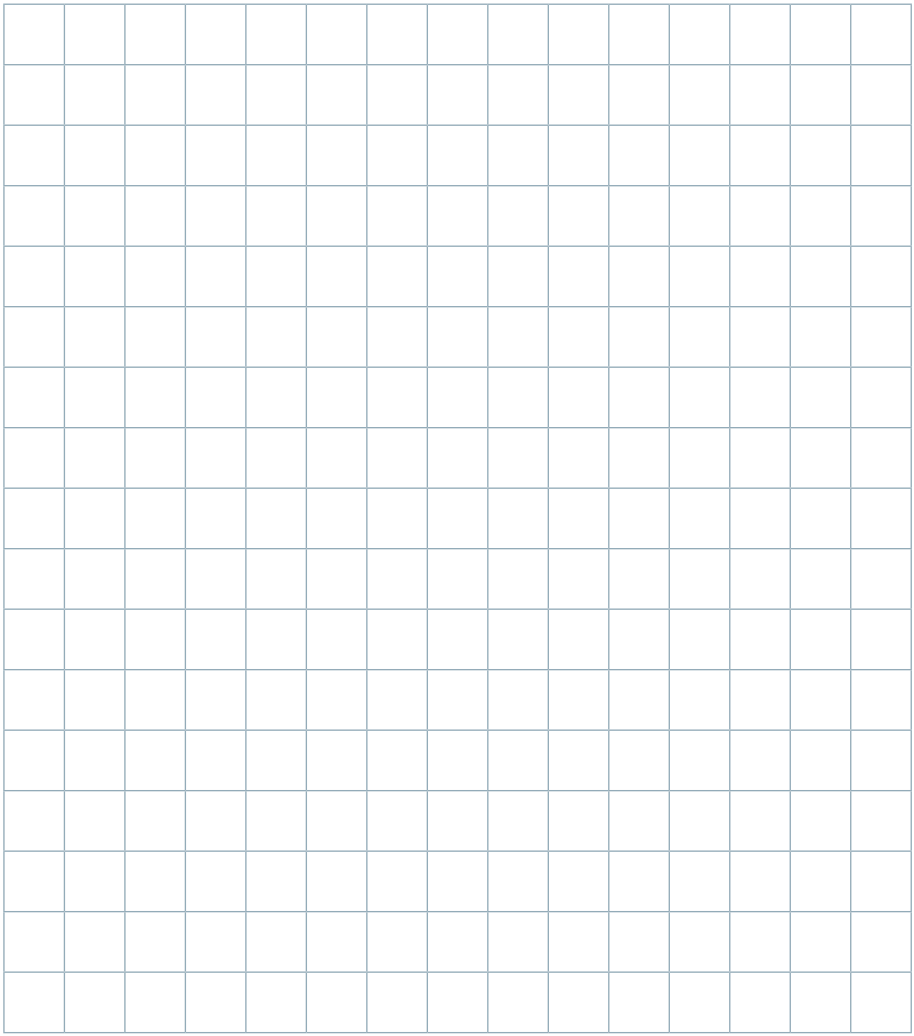
GaiaMat 150W/m²

Product Code	Mat Area (m²)	Output (W)	Resistance (ohms)
72150GO05	0.5	75	705
72150G010	1.0	150	353
72150G015	1.5	225	235
72150G020	2.0	300	176
72150G025	2.5	375	141
72150G030	3.0	450	118
72150G035	3.5	525	101
72150G040	4.0	600	88.2
72150G050	5.0	750	70.5
72150G060	6.0	900	58.8
72150G070	7.0	1025	50.4
72150G080	8.0	1200	44.1
72150G090	9.0	1350	39.2
72150G100	10.0	1500	35.3
72150G120	12.0	1800	29.4

Floor Plan

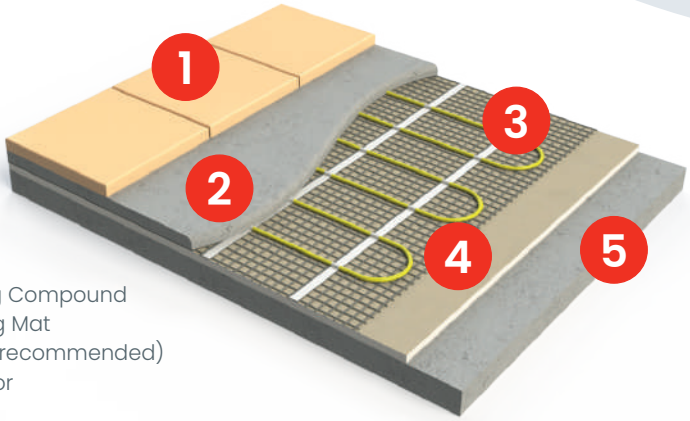
Please sketch your floor plan of the room and show the following:

- Layout of the cables, indicating your heated area.
- Placement of junction boxes.
- Placement of the floor sensor and thermostat.



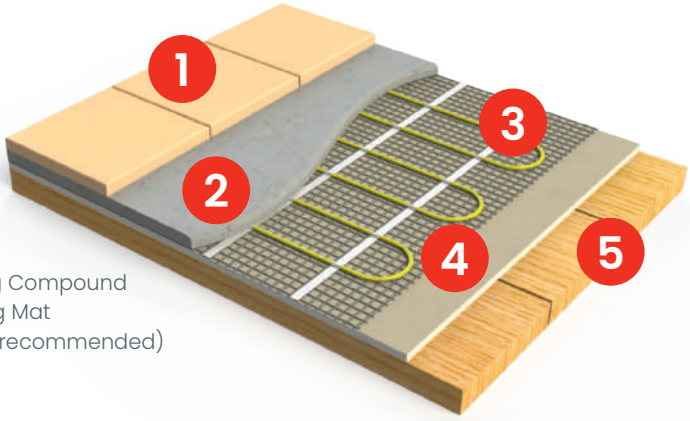
Floor Build Ups

GaiaMat onto Concrete Floors



1 Floor Finish
2 Adhesive/Levelling Compound
3 Underfloor Heating Mat
4 Tilebacker Board (recommended)
5 Concrete Sub-Floor

GaiaMat onto Timber Floors



1 Floor Finish
2 Adhesive/Levelling Compound
3 Underfloor Heating Mat
4 Tilebacker Board (recommended)
5 Timber Sub-Floor

For optimum performance, Gaia always recommends the use of suitable insulation, helping to increase the performance of the heating system.

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