

GB/IRE

Installation And User Instructions

Devimat™ Warm Floor System

Installation Instructions User Guide Trouble Shooter

Please retain
this booklet for
homeowners
future reference.

For Devireg 55 setup
instructions please
see pages 8-10.

For further information go to www.devi.co.uk

DEVI ™
Member of the Danfoss Group

Existing Floor	Maximum load per m ²
Wooden Floors	100 W/m ²
Concrete Floors	150 W/m ²

In all above situations, the floor temperature must be controlled with a DEVI floor sensor and Devireg™ 550 thermostat/timer, or Devireg™ 130 thermostat.

INSTALLATION: KEY POINTS

- Before laying the mat the floor sensor (in controller box) **MUST** be installed. The sensor is fitted into a tube (in mat box) which should be laid 20-30cm across the floor under the mat between a cable loop.
- Before laying check the continuity of the cable, it should match the Ohm rating on the Devimat™ label with a tolerance of -5 to +10% and check the insulation resistance which should read infinity.
- To install the mat simply cut and turn the mat. The heating cable must NOT be cut or subjected to strain around the area of the coupling, only the blue and black cold tail cables can be cut to suit.
- When installing more than one mat, all 'cold tails' (blue/black wires) must be taken back to the connection point/controller, DO NOT wire one mat to another (wired in parallel).
- A flexible adhesive/levelling compound is required when installing the devimat™ product. See page 5 for floor structure details.
- After laying the adhesive the heating mat must be checked once again for continuity and insulation resistance, then connected by an authorised electrician.
- The blue central core is NEUTRAL and the black central core is LIVE. The outer surrounding copper wire is the earth screen and should be connected to earth.
- Installation on new concrete floors should not be carried out for approximately 30 days to ensure thorough drying out.
- **UK only:** The heating cable must be installed in accordance with national building and electrical regulations and connected by a member of a Part P competent persons scheme

Devimat™ specifications

Cable	DTIF
Type	Twin conductor with screen
Voltage	230 V AC
Effect	100 W/m ² or 150 W/m ²
Dimension (W x H)	460 mm x 3 - 3.5 mm
Cold tails	4.0 m, 1.0 mm ² plus screen

Connections

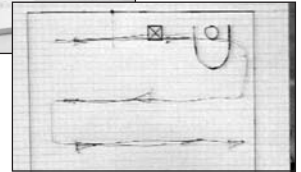
Live	- Black
Neutral	- Blue
Earth	- Screen



Installing the Devimat™

1. Draw up a plan of the room and calculate the free floor area. Use the plan to work out how to lay the mat evenly across the floor and show the location of the cold tail (where the mat starts), floor sensor and connection box.

The Devimat™ should be laid avoiding all floor obstructions and close floor fitting objects like pipes, baths and cupboards. It is acceptable to lay the devimat under suspended cupboards and wash basins.



2. Mark the positions of the floor fitting objects that will be installed once the floor is finished, so when laying the mat these can be avoided.
3. Each mat is supplied with a piece of 10mm flexible tubing (only one tube is required for each thermostat), this is for the floor sensor, so that in the unlikely event that the sensor fails, it can be easily removed and replaced without lifting the floor.



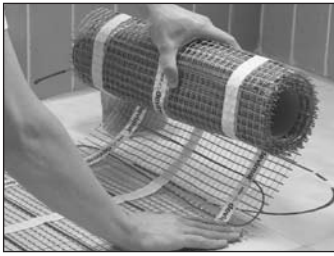
In some situations a small channel may have to be made in the floor to accommodate the tubing. If so, cut a channel from the thermostat position approximately 20-30cm across the floor.



It is important that the channel is positioned such that it lays between two heating wires and not across them and not above heating pipes below the floor. The end of the tubing in the floor is sealed with tape to prevent adhesive entering the tube.

4. The existing floor should be prepared as normally required for tiling, this may include cleaning and removing all loose particles, removing any sharp protrusions that may cause damage to the heating wire, priming the floor surface and bracing a timber floor with WBP ply-for professional guidance refer to your adhesive manufacturers recommendations.

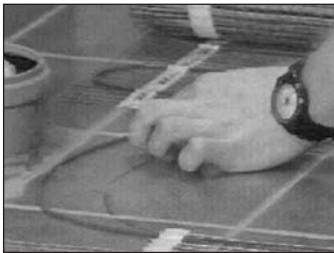
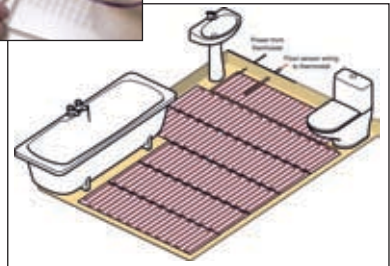




5. Before laying the mat should be tested-see page 7. Remove the plastic outer and place the cold tail of the mat at the connection point. The Devimat™ has a self-adhesive backing, lay this to the floor and roll the mat out, if necessary the mat can be laid with the cable face down. In situations where the mat has to be turned over it can be secured using Devipins, hot glue gun (taking care not to damage the heating cable), staple gun or double sided tape.

Only press the mat onto the sub-floor when you are 100% sure it is placed correctly. If you use a paint on moisture barrier be extra careful removing the mat if it is pressed to the sub-floor.

6. When the Devimat™ reaches the end of the run, simply cut the grey mesh (NOT THE RED CABLE) and turn the mat, positioning the next piece beside the first. When cutting and turning the mat ensure there is a 50mm gap between the cable loops. To avoid risk of damage at later stage do not lay the mat where objects will be put onto or fixed to the floor.



7. If required, the cable can be removed from the mesh and loops formed manually, but ensure the cables are spaced the same distance as those on the mat.

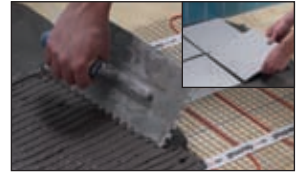
- The devimat™ must NOT be installed across two or more rooms
- The heating cables (RED CABLE) must not touch or cross each other and must be a minimum of 50 mm spacings.
- The heating cables (RED CABLE) must not be CUT.
- All the red heating cable must be within the floor and in a bed of flexible tile adhesive/levelling compound with a floor finish on top.

8. The mat should be tested-see page 7.

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

Concrete and wooden floors using flexible tile adhesives

Working with a width of devimat 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 that 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.

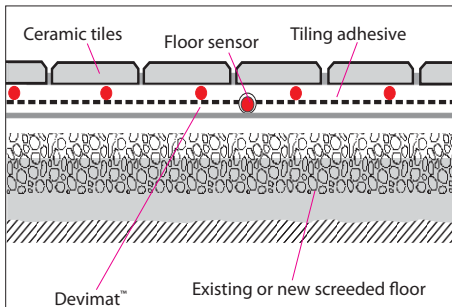


Concrete and wooden floors using self-levelling compounds

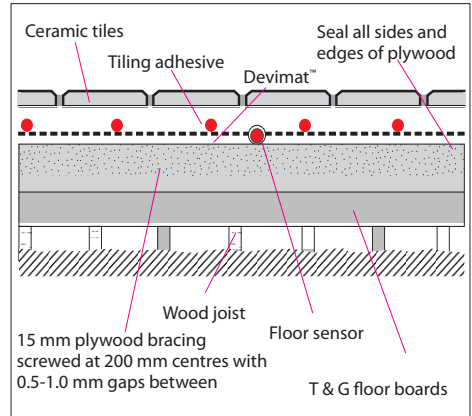
An alternative method is to cover the devimat with a suitable self levelling/ latex type compound. This product will find its own level giving you a flat surface to then apply a layer of flexible tile adhesive using a suitable notched trowel to comb the adhesive before applying the tiles.

The mat should be tested-see page 7.

Installing the Devimat™ on concrete floors



Installing the Devimat™ on timber floors



Flooring note:

Whichever floor covering is being used with the Devimat system, it must be covered with a latex/adhesive covering before the floor finish is laid, the suitability of which should be checked for use with underfloor heating with the manufacturer. If using Devimat beneath wood laminate flooring, you must only use the thin foam type sound-deadening layer, this must not exceed 3mm.

Wiring and controlling the devimat

The heating cable must be installed in accordance with national building and electrical regulations and connected by a member of a Part P competent persons scheme (UK only)

It is recommended that the Devimat™ be connected via a 30mA RCD (residual current device). Wiring regulations state that the thermostat should be located away from sources of water, i.e. outside the bathroom. As the thermostat is sensing floor temperature, the control unit can be located at any level from the floor. ONLY the cold tail(s) of the Devimat™ and the black floor sensor should be leading from the floor to the thermostat position.

The Devimat™ must be controller using either a Devireg™ 130 or a Devireg™ 550, both of which use a floor sensor to monitor the floor temperature.

Both thermostats have a switching limit of 16 amps (35m² of Devimat™ on timber floors or 23m² of Devimat™ on concrete floors) if above these limits a contactor or multiple controllers should be used.

Wiring the Devireg™ 130-see instructions enclosed with the Devireg™ 130.

Wiring the Devireg™ 550-see the instructions below:



Wiring The Devireg™ 550

The sensor cable, heating mat and electricity supply can now be connected. Five simple steps to connecting your controller are:

1. The mains voltage is connected to the terminals marked (Mains L & N).

L = Live

N = Neutral

2. The devimat™ is connected via terminals L and N where :

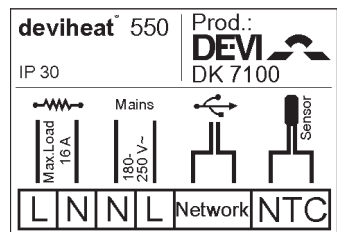
Blue Cable Central Core = Neutral

Black Cable Central Core = Live

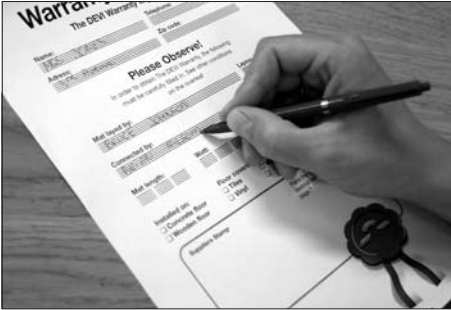
3. The screening around the black and blue wires of the devimat™ should be connected to the earth terminal within the electrical box, in accordance with the electricity regulations.

4. The sensor must be connected to the terminals marked NTC. This cable can be shortened as required and connected either way round.

5. The 'Network' terminal is not used.



Installation complete



Following installation the Warranty Certificate on the back of this user guide should be filled in.

The Devimat™ system should not be turned on until the adhesive and tile grout has completely dried, then once dried it can be turned on gradually over a 48 hour period.

No close fitting objects should be laid or fixed to the warm floor area, for example thick mats or beanbags.

Testing

At each stage of the installation it is recommended that the heating mat is tested for the following:

Continuity- This checks that the heating cable (blue and black wires) are intact and have the correct resistance. The resistance is checked with a multimeter and the reading should match the resistance rating on the label on the cold tail of the Devimat™ with a tolerance of -5 to +10%. Ensure your multimeter is capable of reading values between 28-550 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 the path between the blue cable and the earth screen and the black cable and the earth screen, both should read infinity.

Setting up your Devireg™ 550 programmable thermostat with your devimat™ system

If the thermostat is displaying 'CODE', initially you will ONLY be presented with step 1 and step 4, set these as described below.

Once you have either completed steps 1 and 4, or the controller is displaying something other than 'CODE', you must press and hold the button until the word 'CODE' is displayed and follow the steps below:

Step 1-Setup code Rotate button to select code 0044 and then press button once.

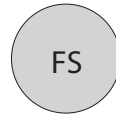


Step 2-Operating mode Rotate button to select 'ALO' and then press button.

Rotate button to select °C and then press button.

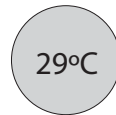
Step 3-Temperature readout

Step 4-Sensor selection Rotate button to select 'FS' to activate the floor sensor, then press button (not rFs or rs).

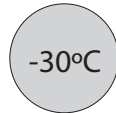
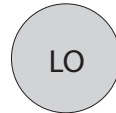


Step 5-Maximum floor temperature selection At 'nt' rotate button to select either of the following temperature selection maximum floor temperatures, then press button.

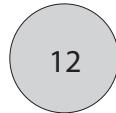
Tiles on timber based floors	29°C
Tiles on concrete based floors	40°C
Timber covered floors (parquet etc.)	27°C



Step 6-Off periods 'LO' should be displayed, you should rotate dial to select -30°C, then press button.




Step 7-Clock display Rotate button to select clock display as either 24 hours or 12 hours AM/PM.



Step 8-Save settings Press button once.

(If the controller is now displaying 'CODE', disconnect the power to the controller and then reconnect)

Now you can set the time and day on the controller.

Step 9-Setting of clock Press and hold button until  is displayed in bottom left corner. The display now shows the time and day (number 1 represents Monday, number 7 is Sunday). Rotate the dial to show the correct time and day of the week and then press the button to save the correct time setting.

*If any steps are skipped, hold button until word 'CODE' is displayed to reset controller and start again at step 1.

Finally you can now set how you wish the controller to operate.

You can operate the controller in either **Manual** or **Timer Mode**, by pressing the button you can toggle between these two modes.

Manual Mode

In this mode the temperature set on the display is maintained 24 hours a day, i.e. no timing facility and therefore no '⌚' displayed. Whilst in manual mode, if you rotate the dial to level 1.0 then turn the dial further anti-clockwise, the thermostat will switch off and display 'OFF'.



Timer Mode

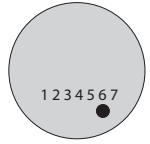
On the timer program, the controller switches on and off as programmed. With this mode you tell the controller **at what time of day you want a warm floor** and then using its intelligence, the controller learns how long your floor takes to warm up.



Step 10

Enter timer mode

Press and hold button until  is displayed in bottom right corner.



Step 11

Select first day

Rotate button to display the first day you wish to program and then press button.



Step 12

First start time

Rotate button to indicate the start of the first time period when you want a warm floor (i.e. 06:00) and then press the button.



Step 13

First end time

Rotate button to highlight duration of first warm floor period, then press button to indicate the end of first time period (i.e. 07:30).



Step 14

Continue

Rotate button to indicate next warm floor start time, press the button, rotate to the end of the period and press button again. Continue this through the whole week.



Step 15

Save program

To save programs, press and hold the button to return to the normal display. By pressing the button once you can now toggle between manual and timer modes.

Step 16

Set floor level

The button now controls the heat level of your Devimat™ system. The controller can be adjusted to the required heat level on a range from 1-10, level 10 being the maximum floor heat. The displayed heat level is what the controller will provide at the times programmed. It is recommended that you initially set to level 5, then adjust to suit.

Devimat™ Trouble Shooter

Should you experience any problems with the Devimat™ not warming the floor, before calling DEVI, the following tests should be carried out:

No.	Test	Expected Outcome	Action
1	Check for a 230V supply to the thermostat on terminals 1 and 2.	230V	If no voltage present, connect supply.
2	Rotate thermostat dial to position 10 and test for a 230V output on terminals 3 and 4. This may take a few minutes to switch on.	230V	Firstly, check resistance of floor sensor first (step 3). If floor sensor is normal, the thermostat is faulty-contact your supplier.
3	Turn off power to thermostat and test resistance of floor sensor.	10-20kΩ, depending on temperature of floor.	If sensor is faulty, call your supplier for replacement.
4	Turn off power to thermostat and test resistance of the devimat™.	27-550Ω, depending on mat size (see mat label).	If mat is faulty, the mat has been damaged, contact your supplier.
5	Turn off power to thermostat and ensure there is no continuity between the conductors and the earth screen.	No continuity.	If there is continuity between the conductor and screen, the mat has been damaged, contact your supplier.

Devireg™ 550 Controller Trouble Shooter

If the outer ring on the Devireg™ 550 controller is flashing you have a fault, note the small number at the bottom of the display and follow the procedures below:

Fault	Possible Cause	Solution
Devireg™ 550 controller indicating error No. 2.	Unit Configured as a Master, but can detect another master unit	Only one unit may be configured as a master-see 550 programming instructions.
Devireg™ 550 controller indicating error No. 3.	Unit Configured as a Slave, but cannot detect another master unit	Thermostat incorrectly set during configuration. See step 2, page 8. Set to ALO
Devireg™ 550 controller indicating error No. 4	The thermostat is switched off because of overheating	Call an electrician (Let the thermostat cool for a period. Then enter basic set-up to leave error mode).
Devireg™ 550 controller indicating error No. 5.	Sensor fault. Floor sensor short-circuit	Call an electrician (Have an authorised electrician check the floor sensor wiring and obtain a resistance reading of 10K - 24K Ohms).
Devireg™ 550 controller indicating error No. 6.	Sensor fault. Floor sensor open circuit	Call an electrician (Have an authorised electrician check the floor sensor, resistance should be 10K - 24K Ohms).
Devireg™ 550 controller indicating error No. 7.	Clock not adjusted	Set the clock. (see step 9, page 8)
Devireg™ 550 controller not working at all.	No power Wiring incorrect or Faulty unit	See devimat™ Trouble Shooter above.

IF AT ANY POINT THE CONTROLLER IS NOT FUNCTIONING CORRECTLY PLEASE TURN OFF THE POWER AND RESET THE CONTROLLER.

The DEVI Warranty:

You have purchased a Deviheat™ system, which we are certain will improve your home comfort and economy.

Deviheat™ provides complete heating solutions with Deviflex™ heating cables or Devimat™ heating mats, Devireg™ thermostats and Devifast fitting bands.

If, however, contrary to all expectations, a problem should occur with your heating system, we at DEVI, with manufacturing units in Denmark, are, as European Union suppliers, subject to general product liability rules, as stated in Directive 85/374/CEE, and all relevant national laws which imply that:

DEVI provides a warranty for Deviflex™ heating cables and Devimat™ heating mats for a 10 year period and all other DEVI products for a 2 year period against defects in material and production.

The guarantee is granted on the condition that the WARRANTY CERTIFICATE overleaf is filled out properly in accordance with instructions and that the defect is inspected by, or presented to, DEVI or their authorised DEVI distributor.

Please note that the wording of the WARRANTY CERTIFICATE must be provided in English with the ISO code for your country in the upper left corner of the front page of the installation instructions in order to release the warranty.

The obligation of DEVI will be to repair or supply a new unit, free of charge to the customer, DEVI are not responsible for secondary charges linked to repairing the unit. In case of defective Devireg™ thermostats, DEVI reserves the right to repair the unit free of charge and without

unreasonable delay to the customer. The DEVI warranty does not cover installations made by unauthorised electricians, or faults caused by incorrect designs supplied by others, misuse, damage caused by others, or incorrect installation or any subsequent damage that may occur. If DEVI is required to inspect or repair any defects caused by any of the above, then all work will be fully chargeable. The DEVI warranty is void, if payment of the equipment is in default.

At all times, we at DEVI will respond honestly, efficiently and promptly to all queries and reasonable requests from our customers.

The above mentioned warranty concerns product liability whereas matters in relation to legislation on sale of goods shall be referred to national law.

N.B. Unit means DEVI installed equipment.

Warranty Certificate

The DEVI Warranty is granted to:

Name:

Phone:

Address:

Postal code:

Please Observe!

In order to obtain the DEVI Warranty, the following must be carefully filled in. See other conditions on the overleaf.

devimat™ layout contractor:

Lay-out date:

Electrical Installation by:

Installation date:

Mat length:

Watt:

Stock code:

Application:

Concrete floor

Wooden floor

Tiles

Vinyl

Parquet

Carpet

Supplier Stamp:

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