Underfloor Heating (UK)
Industrial - Commercial - Domestic

Devimat™ 100/150

Single conductor heating mat in ready made lengths

Product Manual

www.underfloorheating-uk.co.uk

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Mission Statement

Underfloor Heating UK is a subsidiary of CJ Electrical (Ipswich) ltd, created to distribute Quality products via the internet and by an external technical sales team. Underfloor Heating UK are an accredited partner of Devi™, distributing the full range of Devi™ and associated underfloor heating products. Based in Suffolk, covering national & international distribution.

Improving Internet Product Supply
Moving forward with quality products that can be easily purchased at your own convenience, Underfloor Heating UK recognises the importance of supplying quality products at reasonable prices, with full technical advice and planning service supported by a 30 day money back guarantee & free of charge delivery to your door.

Striving to Ensure Customer Satisfaction
We here at Underfloor Heating UK take very seriously the concept of customer service, striving to ensure your purchase is based on an educated & informed decision. Understanding all the benefits and advantages of our product range, we believe is essential to customer satisfaction, particularly when purchasing from a company selling via internet. We aim to achieve this and are continually striving to improve our customer service.

Introduction to Devimat

This is a self-adhesive mesh with the ultra-thin heating cable pre-attached all totaling just 3-3.5mm thick. The mat design not only enables a fast installation, but as the heating cables are already spaced out on the mesh and even heat is guaranteed across the whole floor, with no warm-cold ripples. As the mat is so thin, it can be installed within the thickness of the tile adhesive, adding no appreciable height to the floor. The mats are all 500mm wide and available in various lengths. There are two mat types (see opposite), one for installation onto timber based floors

(rated 100W/m2) and one for concrete based floors (rated 150W/m2). The Devimat is made according to the highest European Standards, part of which state that the amount of heat that can be installed on to a timber floor should be limited from a point of view of safety, hence the two mat types. The self-adhesive, open weave mesh design of the Devimat, plus only having one connection tail, at the start of the mat, ensures a fast and simple installation. The first strip of the mat is laid on the floor, the mesh is cut, the mat turned and the next piece is rolled out.

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Introduction to Deviguard

This device can be connected to the mat during installation to monitor the heating cable circuit. Accidents do happen and in the event that the heating cable is cut or damaged during installation an audible alarm will sound, installation can be halted and the cable repaired with a repair kit. The unit uses a standard 9V battery (not supplied).

Introduction to Aquapanel

Aquapanel Thermal is a lightweight insulated tile backing board developed specifically for use with tiled floors. It consists of a Polyfoam core with glass fibre reinforced polymer-modified cement faces.

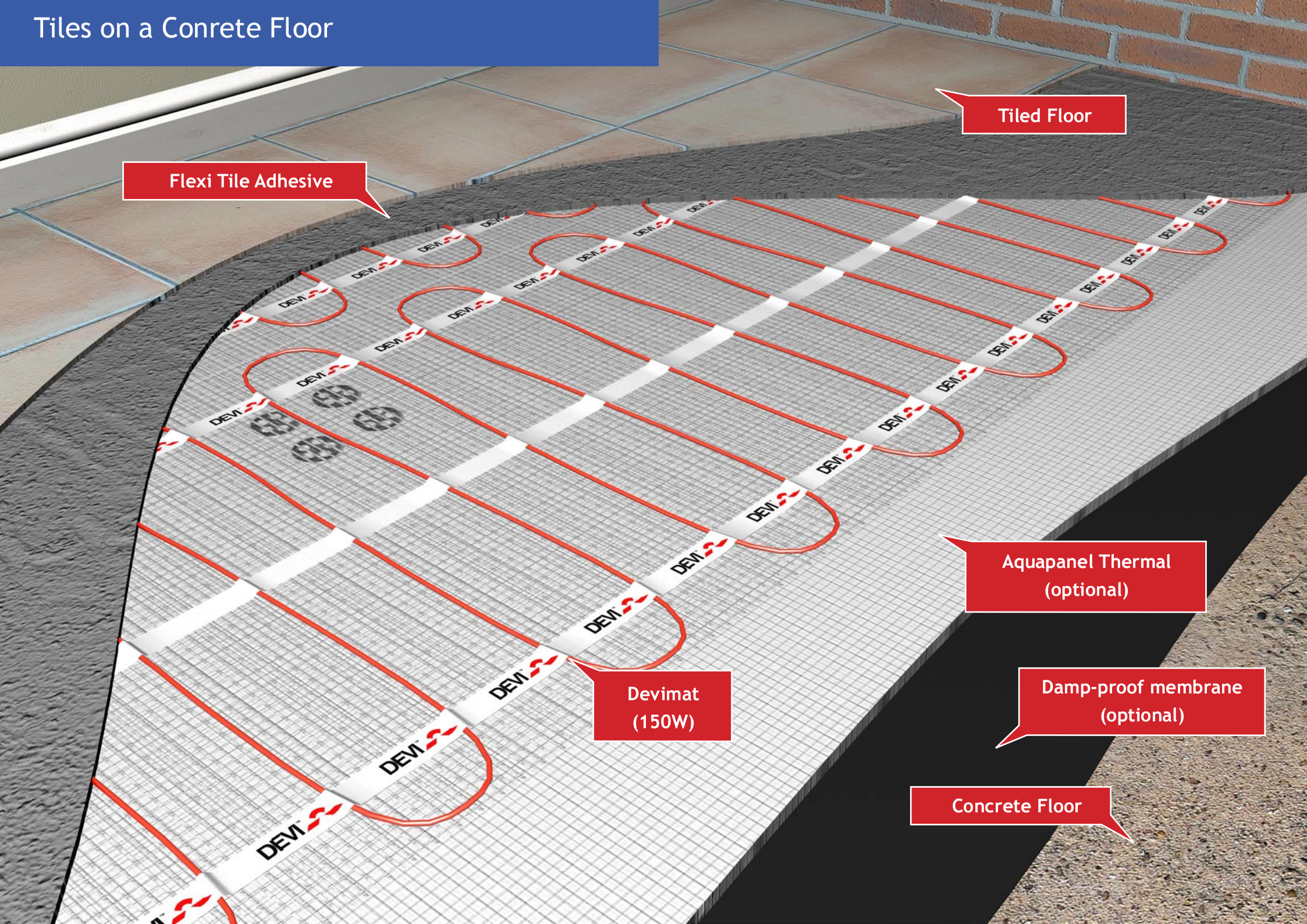
Aquapanel Thermal is dimensionally stable, doesn't rot or warp and provides excellent resistance to moisture. It also offers the additional benefit of a high level of thermal insulation, making it the ideal substrate for floor tiling and under-tile heating systems.

Floor Construction Examples

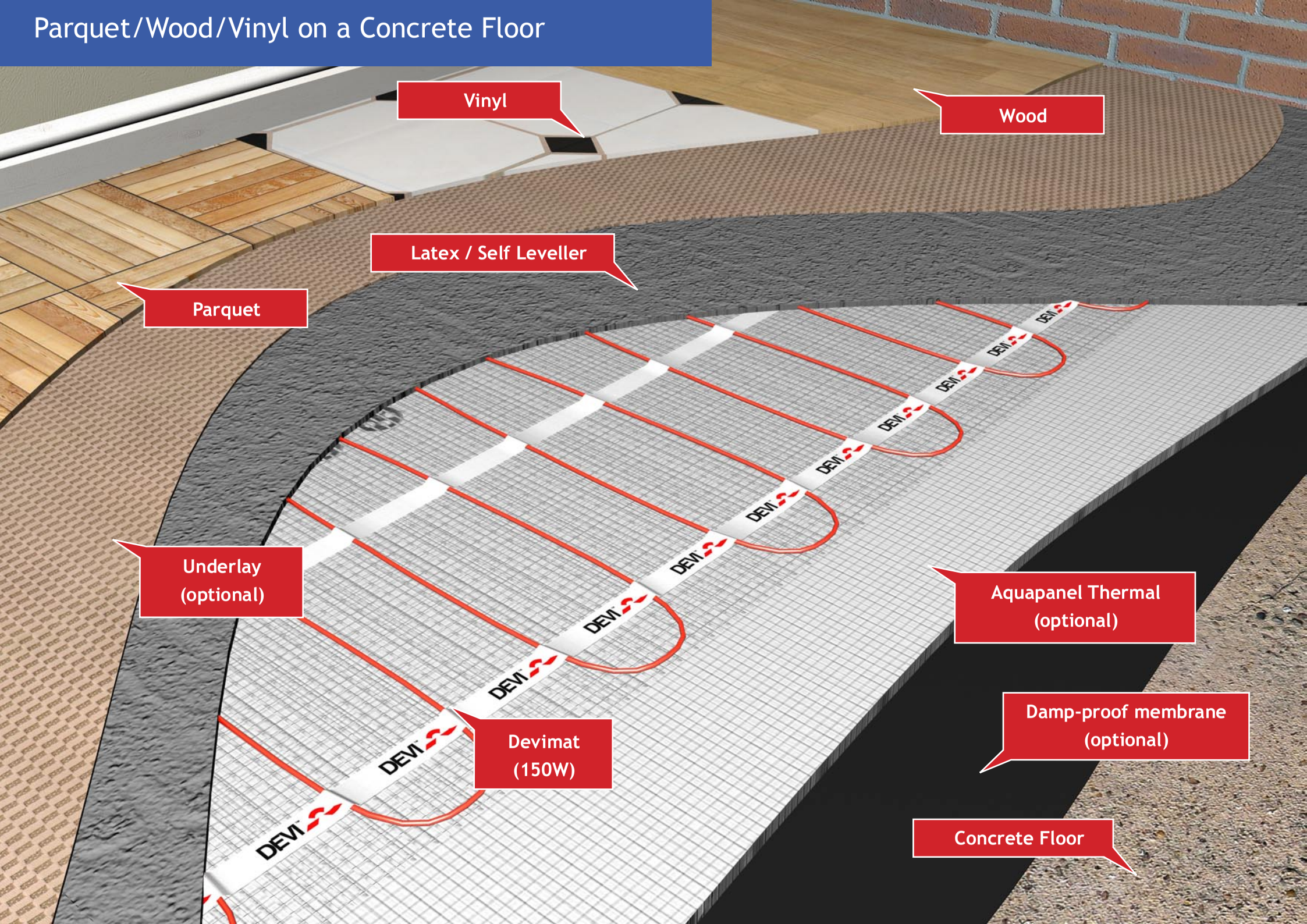
Please take time to look at our three different examples of floor constructions:

Although not comprehensive of every project, our examples illustrate common installations for Devimat heating and Devireg thermostat.

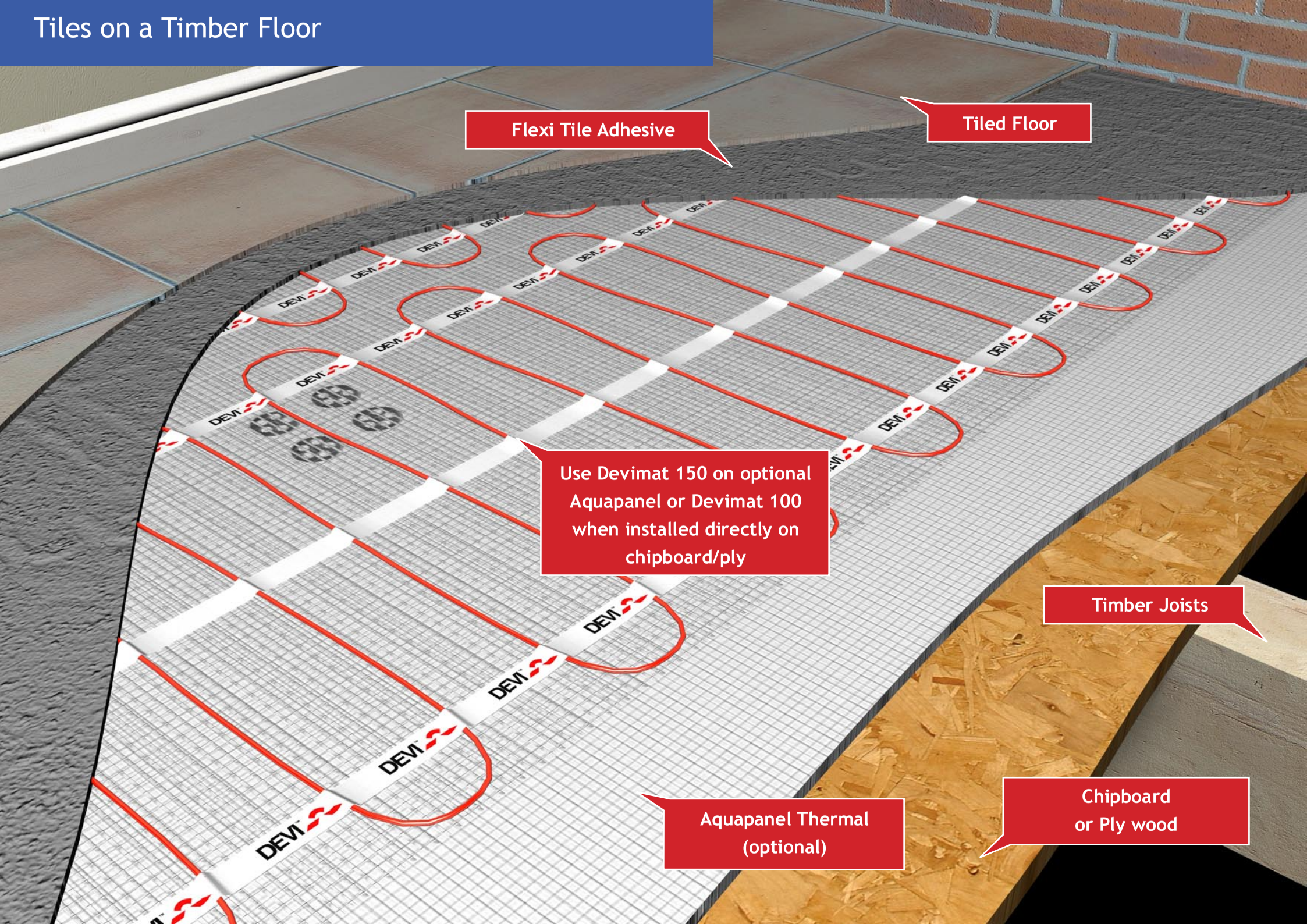
Tiles on a Conrete Floor



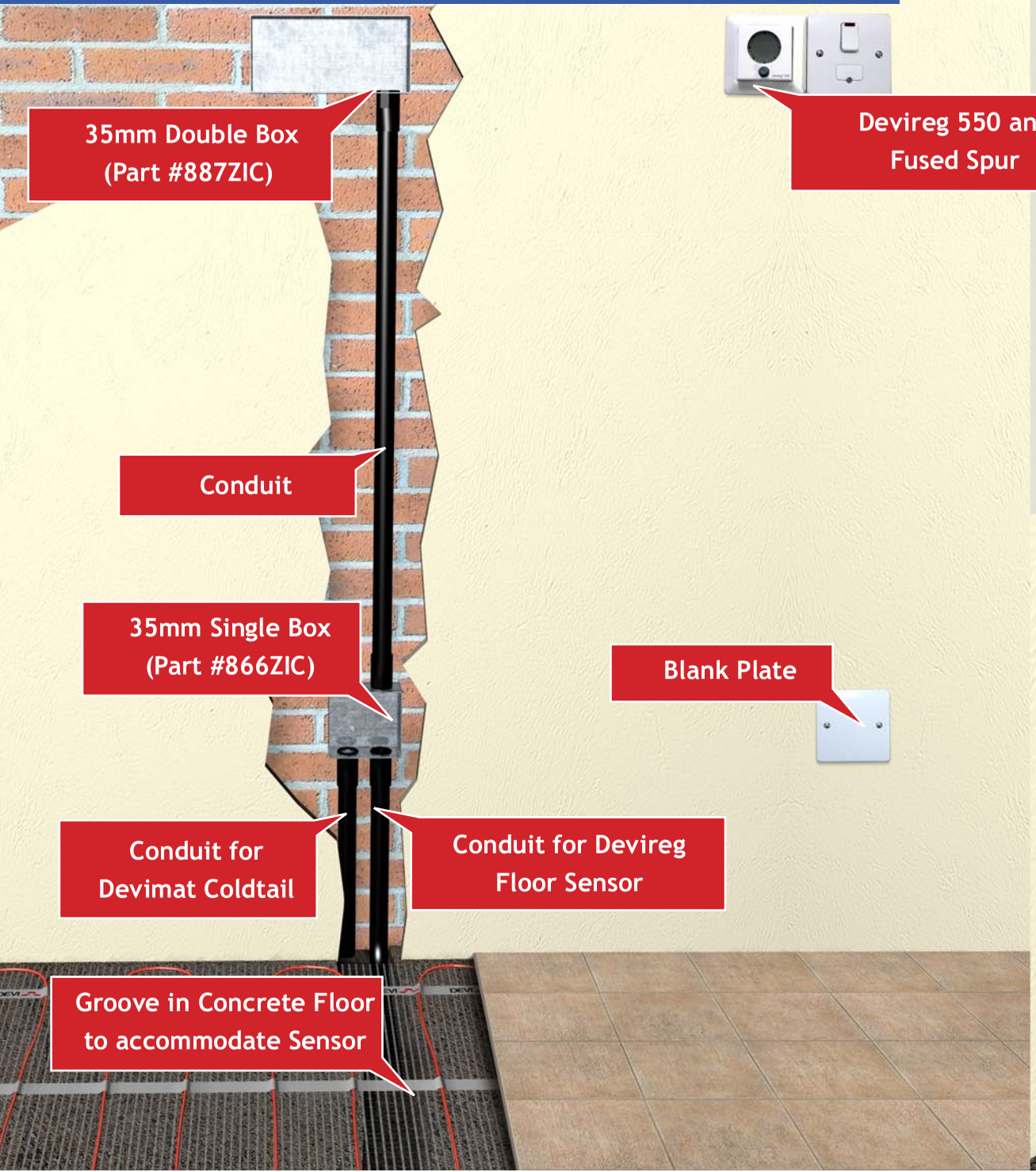
Parquet/Wood/Vinyl on a Concrete Floor



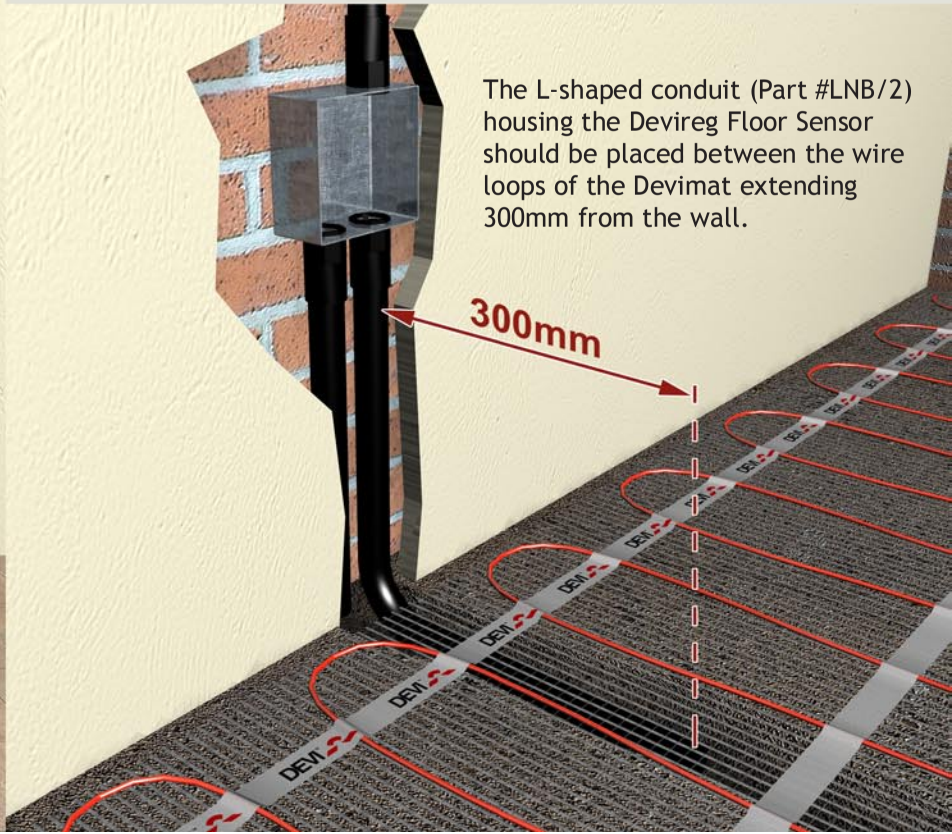
Tiles on a Timber Floor



Devireg and Floor Sensor



A closer look at a finished Devireg and Fused Spur.



The L-shaped conduit (Part #LNB/2) housing the Devireg Floor Sensor should be placed between the wire loops of the Devimat extending 300mm from the wall.

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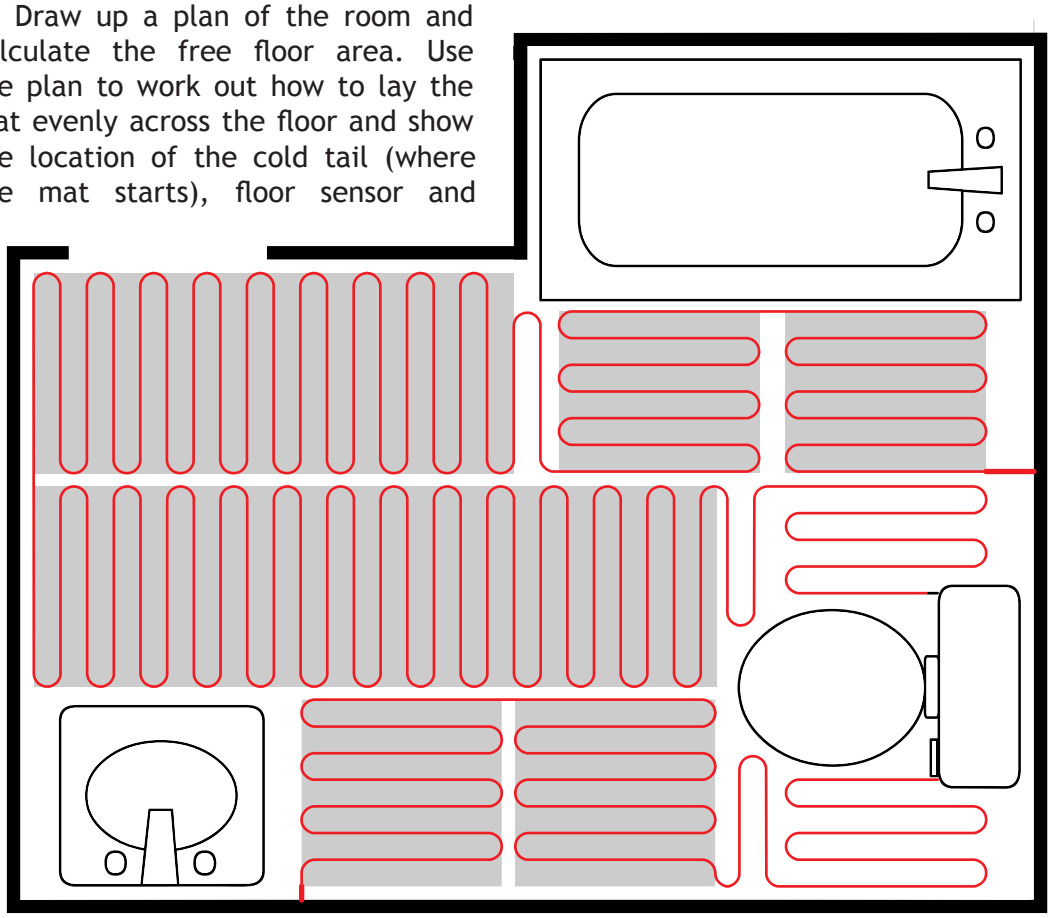
Installing the Devimat

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 floor 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 will have to be made in the floor to accomodatethe tubing. If so, cut a channel from the thermostat position approximately 20-30 cm across the floor. It is important that the channel is

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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 sealedwith 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 protusions that may cause damage to the heating wire, priming the floor surface bracing a timber floor with WBP ply-for professional guidance refer to your adhesive manufacturers recommendations.

5. Before laying the mat should be tested. 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 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.

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.

8. The mat should be tested. 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 apllied carefully using a suitable notched trowel to comb the adhesive before applying the tiles.

Concrete and wooden floors using self-leveling compunds.

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.

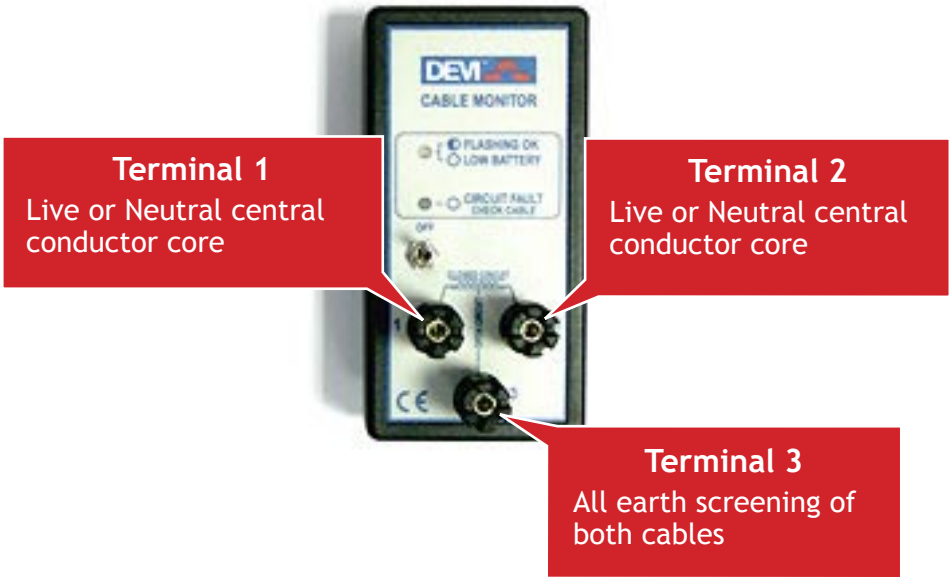
Flooring note:

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.

How to use the Cable Monitor

ONLY USE ONE CABLE/MAT PER CABLE MONITOR

The Deviguard Cable Monitor has three terminals, the heating cable/mat should be connected as follows:



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Once switched on the Deviguard Cable Monitor will display one of the following modes:

	Top Light	Bottom Light	Status
A	Flashing Yellow	Off	Battery OK Element OK
B	Flashing Yellow	Constant Red	Battery OK Element Damaged
C	Constant Yellow	Off	Battery low, replace Battery
D	Off	Off	Battery discharged, replace Battery
E	Constant Yellow	Constant Red	Battery Low Element Damaged

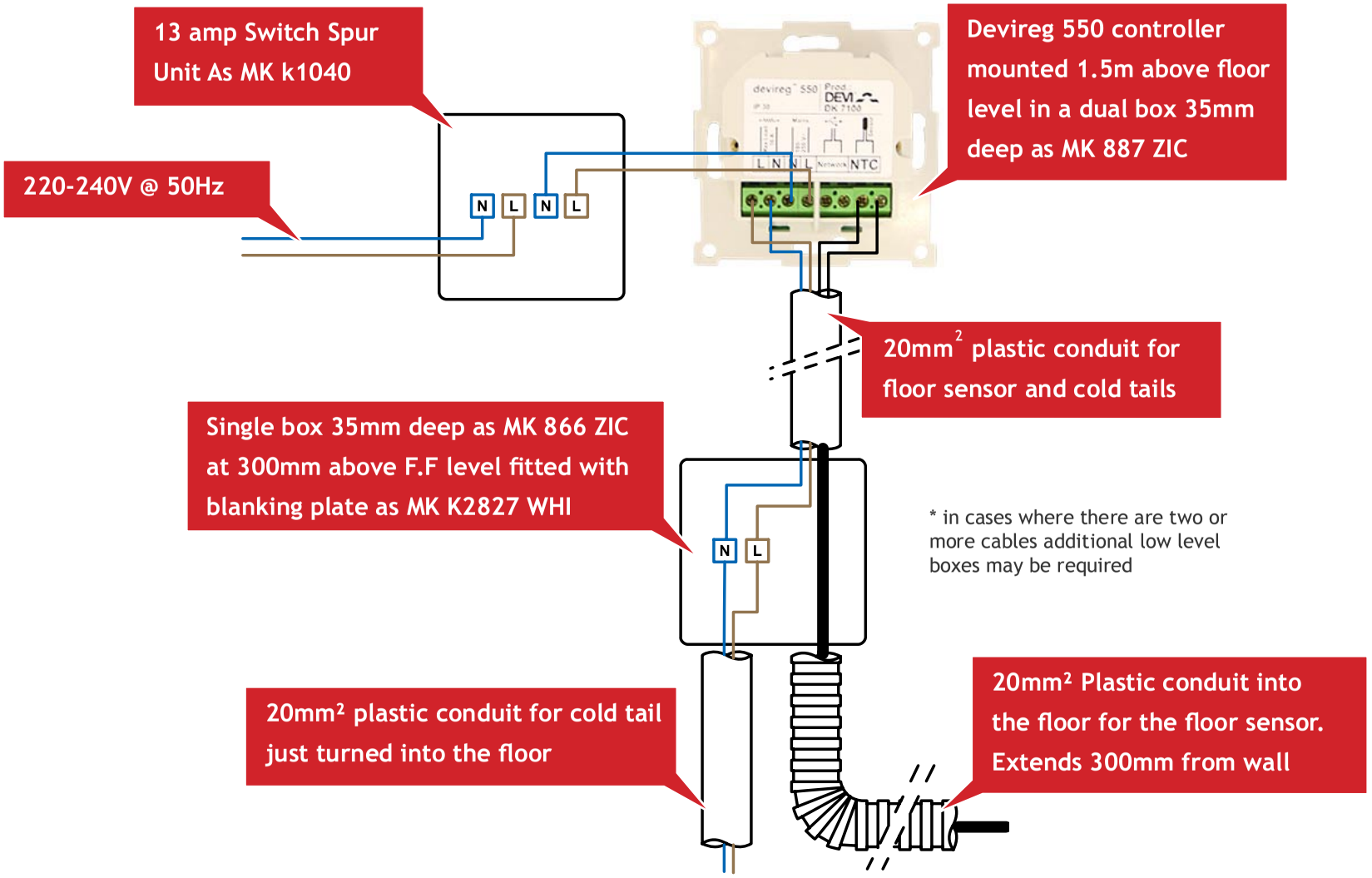
When mode 'B' is displayed, an audible alarm will also sound to alert you to a problem.

If the Deviguard Cable Monitor sounds and shows an error then work on the floor whould be stopped immediately and the working area should be checked for further damage to the heating cable.

Deviguard Specification

Design alarm closed circuit resistance	> 1,000
Design monitoring closed circuit resistance	< 600
Design alarm open circuit resistance	> 100,000
Power	9V PP3 alkaline battery
Life	With no fault, battery life should exceed 14 days continuous operation, this will be less should a fault be detected and the alarm sounds.

carcase wiring requirements for Devimat upto 20m² concrete & 30m² timber floors using the Devireg 550 controller



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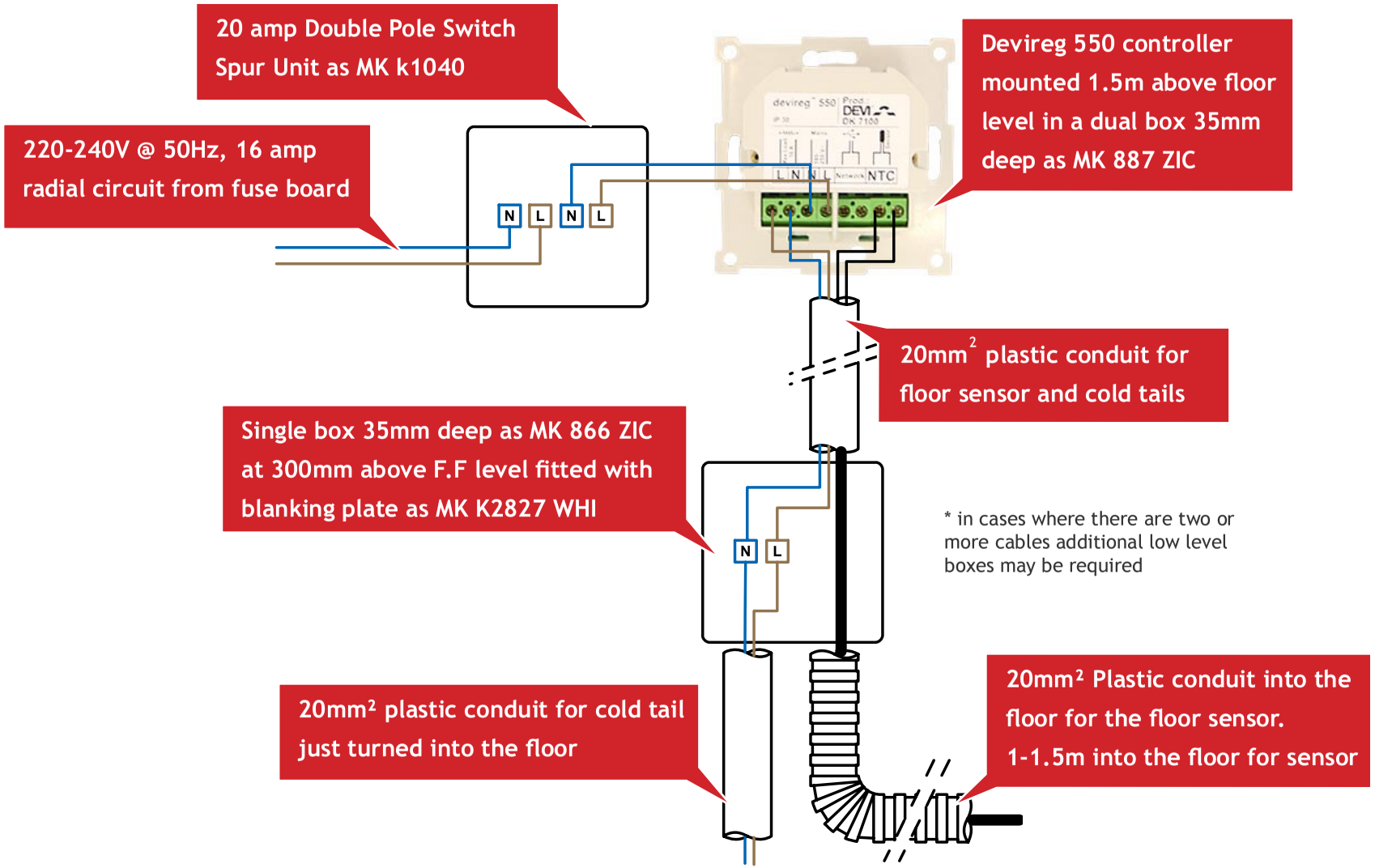
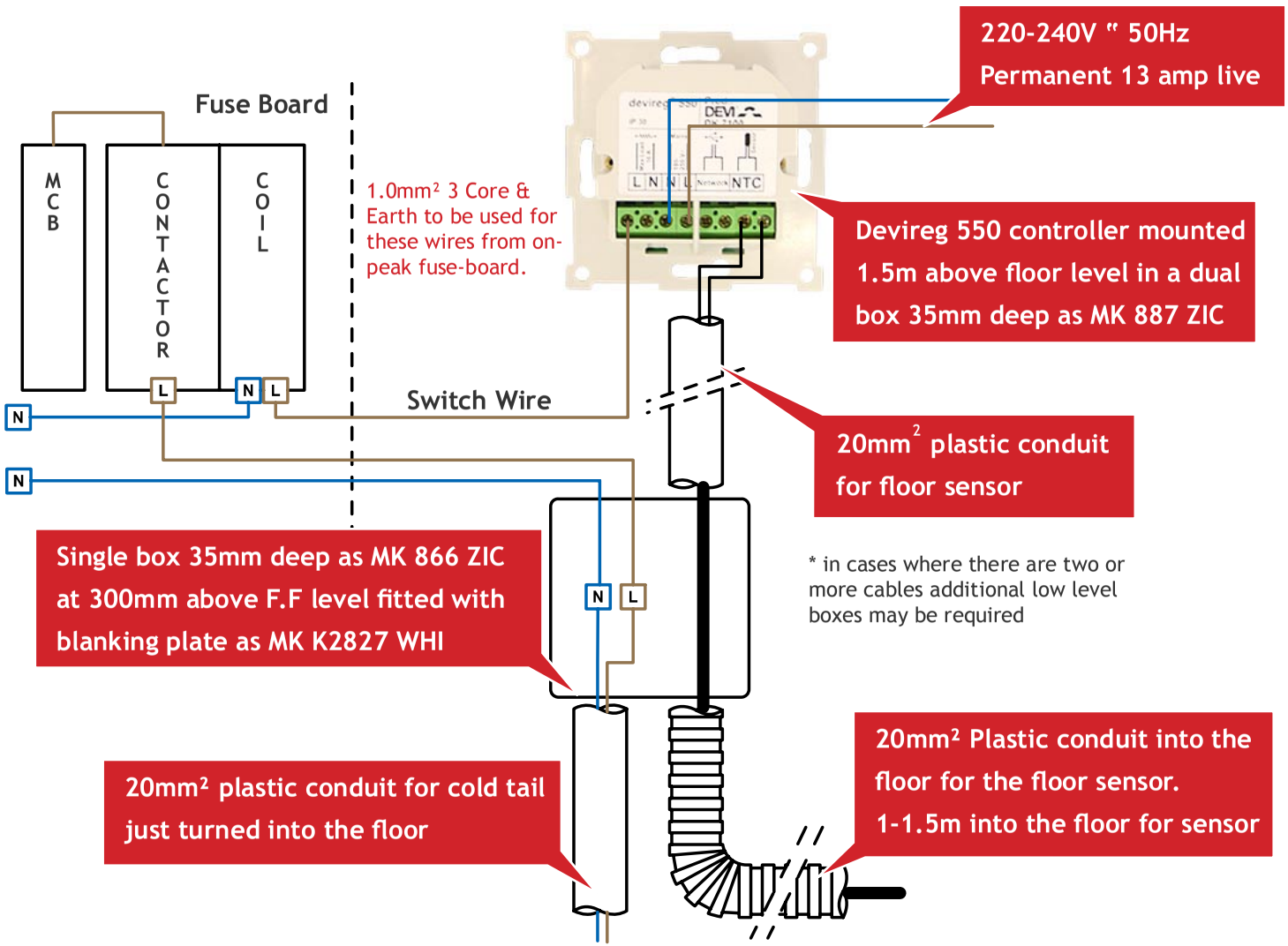
carcase wiring requirements for Devimat between 20m²-23m² concrete &30m²-35m² timber floors using the Devireg 550 controller



carcase wiring requirements for Devimat above 23m² concrete & 35m² timber floors using the Devireg 550 controller



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Setting up your Devireg 550

If the thermostat is displaying "CODE", initially you will only be presented 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

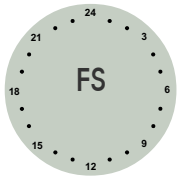
Rotate button to select "ALO" and then press button.

Step 3 - Temperature readout

Rotate button to select °C and then press button.

Step 4 - Sensor selection

Rotate button to select "FS" to activate the floor sensor, then press button (not rFs or rs).



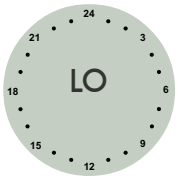
Step 5 - Maximum floor temperature selection

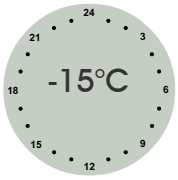
At "Ոt" rotate button to select either of the following maximum floor temperatures, then press button.

Tiles on timber based floors	27°- 31°C
Tiles on concrete based floors	40°C
Timber covered floors (parquet etc.)	27°C

Step 6 - Operating mode

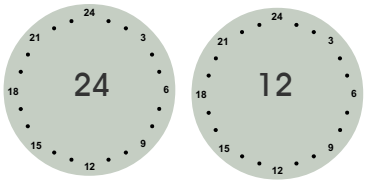
"LO" should be displayed, you should rotate dial to select -15°C, then press button.





Step 7 - Clock display

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



Step 8 - Operating mode

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 the bottom left corner. The display now shows the time and day (number 1S 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 stitch 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.

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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 (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 end of first time period (i.e. 07:30).

Step 14 – Continue

Rotate button to indicate next warm floor period, press the button, rotate to end of the period and press button again. Continue 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 required heat level on a range of 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.

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Accessory Packs

Part No: ACM1PACK
Accessory Pack for upto 20sqm concrete & 30sqm Timber.

Description	Ind Part No	Qty
13amp Switched Fuse Spur	K1040WHI	1
Single Blank Plate	K3827WHI	1
1.5m 20mm Conduit	HIP2	1
Female Conduit Adapter	EFA/2	3
90 Conduit Bend	LNB/2	1
35mm Dual Box (Flush)	887ZIC	1
35mm Single Box (Flush)	866ZIC	1
Insulated Connector Strip	30ACS	1
Wiring diagram	WD1	1
Devi Guard	DG1	1

Part No: ACM1RCDPACK
Accessory Pack for upto 20sqm concrete & 30sqm Timber c/w RCD

Description	Ind Part No	Qty
13amp Switched Fuse Spur RCD	SCD10WL	1
Single Blank Plate	K3827WHI	1
1.5m 20mm Conduit	HIP2	1
Female Conduit Adapter	EFA/2	3
90 Conduit Bend	LNB/2	1
35mm Dual Box (Flush)	887ZIC	1
35mm Single Box (Flush)	866ZIC	1
Insulated Connector Strip	30ACS	1
Wiring diagram	WD1	1
Devi Guard	DG1	1

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Part No: ACM2PACK
Accessory Pack for between 20sqm & 23sqm concrete, 30sqm & 35sqm Timber

Description	Ind Part No	Qty
20amp Double Pole switch	K5403WHI	1
Single Blank Plate	K3827WHI	1
1.5m 20mm Conduit	HIP2	1
Female Conduit Adapter	EFA/2	3
90 Conduit Bend	LNB/2	1
35mm Dual Box (Flush)	887ZIC	1
35mm Single Box (Flush)	866ZIC	1
Insulated Connector Strip	30ACS	1
Wiring diagram	WD2	1
Devi Guard	DG1	1

Part No: ACM3PACK
Accessory Pack for upto 20A

Description	Ind Part No	Qty
20A MK Contactor Double Pole	6220s	1
4 Module IP30 enclosure	5604s	1
Single Blank Plate	K3827WHI	1
1.5m 20mm Conduit	HIP2	1
Female Conduit Adapter	EFA/2	3
90 Conduit Bend	LNB/2	1
35mm Dual Box (Flush)	887ZIC	1
35mm Single Box (Flush)	866ZIC	1
Insulated Connector Strip	30ACS	1
Wiring diagram	WD3	1
Devi Guard	DG1	1

Part No: ACM4PACK
Accessory Pack for between 20A & 40A Supply

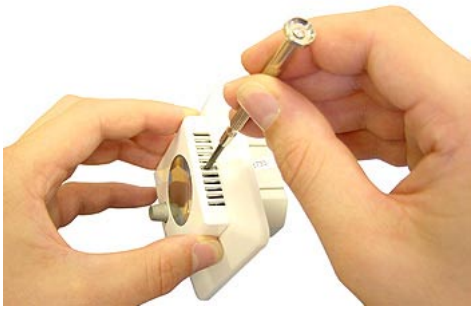
Description	Ind Part No	Qty
40A MK Contactor Double Pole	7240s	1
4 Module IP30 enclosure	5604s	1
Single Blank Plate	K3827WHI	1
1.5m 20mm Conduit	HIP2	1
Female Conduit Adapter	EFA/2	3
90 Conduit Bend	LNB/2	1
35mm Dual Box (Flush)	887ZIC	1
35mm Single Box (Flush)	866ZIC	1
Insulated Connector Strip	30ACS	1
Wiring diagram	WD4	1
Devi Guard	DG1	1

Mains Accessories

Description	Ind Part No	Qty
20A MK Contactor Double Pole	6220s	1
40A MK Contactor Double Pole	7240s	1
4 Module Enclosure	5604s	1
8 Module Enclosure	K5608s	1
63A 230V 30ma RCD 2 Mod	5760s	1
100A 230V Main Switch	5560s	1
230v 6A MCB	5906s	1
230v 10A MCB	5910s	1
230v 16A MCB	5916s	1
230v 20A MCB	5920s	1
230v 32A MCB	5932s	1
230v 40A MCB	5940s	1
230v 45A MCB	5945s	1

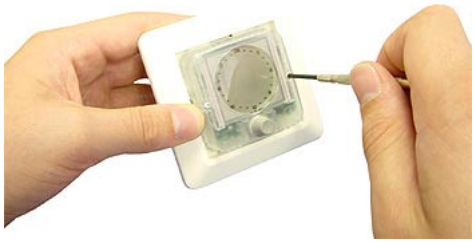
Installation of Devireg 550

When installing devireg™ 550 you must first dismantle the thermostat.

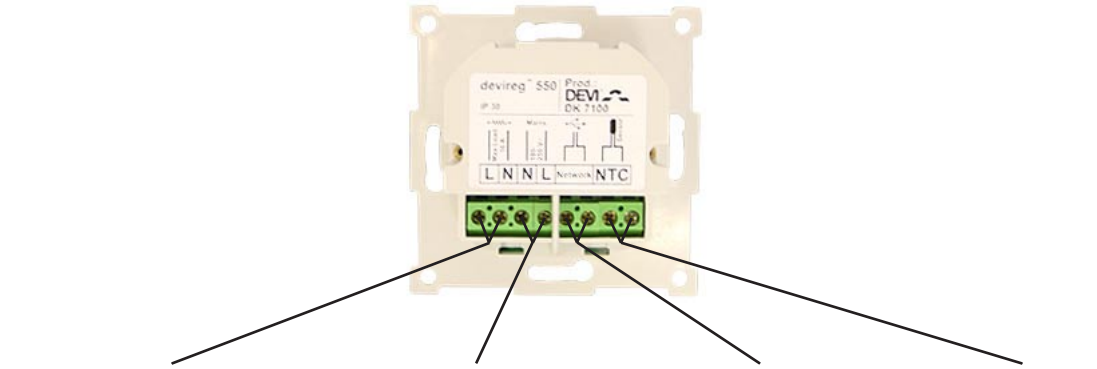


Remove the front cover by gently pressing the release tab in the top (center hole), and lift out the cover.

Remove the two screws, one in each side, and gently pull off the display module.



Remove the frame from the thermostat.



Connection of the thermostat must be carried out as shown above.

As the devireg™ 550 is not equipped with an earth terminal, the earthing screen of the heating cable must be connected to the earth from the supply via the earthing terminal in the surface mounted box or the recessed metal box which ever is used.

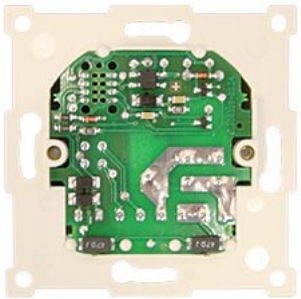
When installing the devireg™ 550 you need to choose the type of heating and thus which sensors should be used.

DEVI™ recommend always to install the floor sensor!

Comfort Heating:
- Constant temperature on the floor in e.g. bathrooms and other rooms that are often used with bare feet.
- Install the Floor sensor and choose only the Floor sensor in Basic Settings.

Total Room Heating:
- Control of room temperature in living rooms etc.
- Install the Floor sensor and choose both Floor sensor and Room sensor in Basic Settings.

No Floor Sensor:
- A floor sensor is not present, and cannot be installed.
- Choose Room sensor only in Basic Settings.
- Be aware that temperature control is less accurate without the floor sensor.



DEVI™ recommend that a floor sensor is installed.

Do NOT use devireg™ 550 without floor sensor when the heating element is installed on or beneath wooden surfaces!

You can now mount the thermostat in the wall, by using any of the eight screw holes in the base module.

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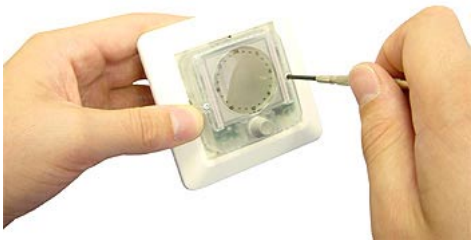
For getting the best possible result when using the devireg™ 540/550, the thermostat should be installed in the wall, following a few basic rules:

- Installation height, typically between 80-150 cm.
- On a wall NOT facing the outside.
- On a wall where it will NOT be subjected to direct sunlight.
- Away from windows/doors that will be open occasionally.
- On a wall where it will NOT be covered by curtains, towels etc. hanging in front of the thermostat.

WARNING!
Please note, when working on thermostats connected to a network, ensure that the mains supply for all thermostats in the network is disconnected before the work is started.

Reassemble the thermostat by first placing the frame, then mount the display module and finally press the front cover into place.



Note:
The display must be gently remounted on the base module, ensuring that the 8-pin plug is placed accurately by using the four tabs surrounding it.

When remounting the two screws in the side, please DO NOT over tighten them. They just need to be barely fastened.

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Notes:

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