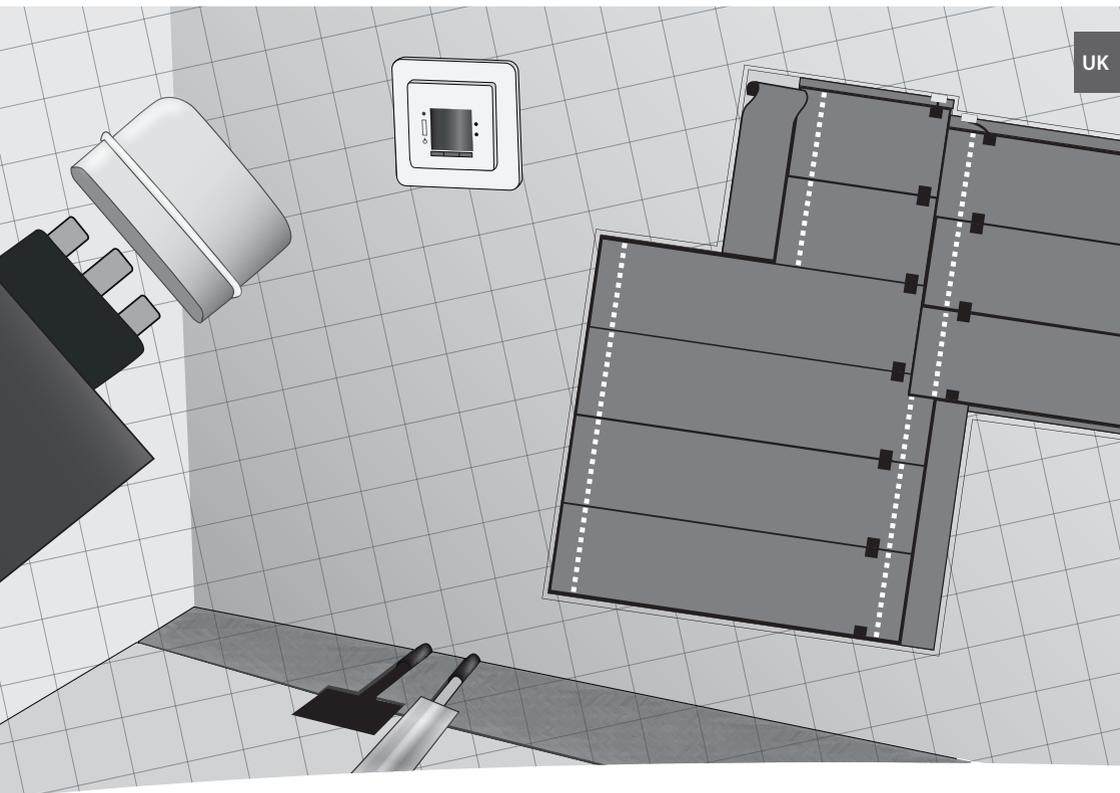




The Click & Pro System

DEVI ™

Member of the Danfoss Group



Installation Instruction

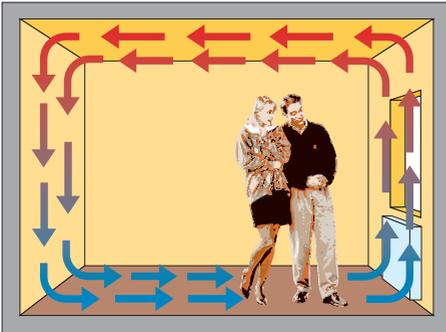
Devidry™- for installation with Devidry™ Pro Kit

Devidry™

Congratulations with your new DEVI floor heating system. DEVI is Europe's leading floor heating manufacturer with more than 45 years of experience.

We are confident that you will be satisfied with your new system. DEVI brings you optimum comfort with the luxury and comfort of a warm floor as well as a pleasant room temperature.

Floor heating is the most comfortable type of heating because it is based on the fact that warmth travels upwards; pleasant warmth for your feet, body and head.



General information

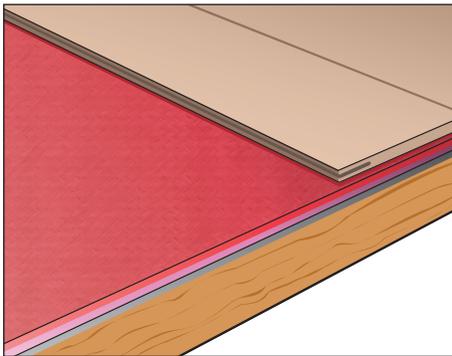
The Devidry™ floor heating system consists of a foam/carpet heating element with heating elements inside. The system must always be controlled with a Devireg™ (please refer to List of Devireg™ on page 19) as it is part of the safety and overheating protections system.

The Devidry™ floor heating system can be used under wooden floors such as parquet and laminate. Please check the specifications with your supplier of these products.

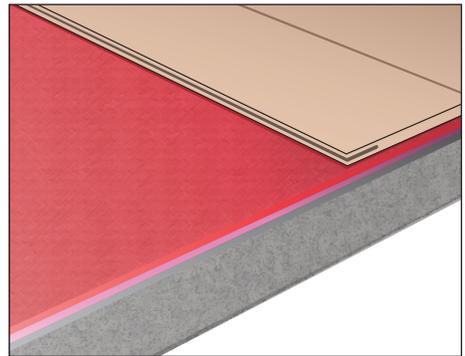
Devidry™ has been tested and approved with flooring materials with insulation values from 0,05 to 0,18 m² K/W. For best performance of the floor heating system, keep the insulation value from the Devidry™ heating unit to floor surface as low as possible.

The Devidry™ floor heating system has been developed to the dry application area for underfloor heating. It is applicable for wooden and concrete floor constructions with the two output ranges 55 W/m² and 100 W/m².

UK



*Flooring
Devidry™ 55
Wooden floor construction*



*Flooring
Devidry™ 55 or 100
Concrete floor construction*

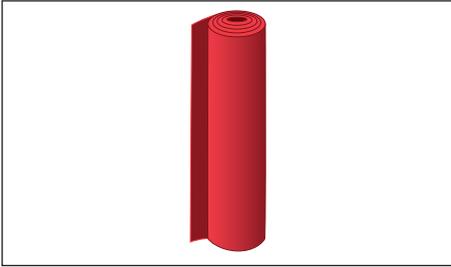
The maximum thermal resistance between the Devidry™ element and the room is 0,18 m² K/W as shown in the table below.

The Devidry™ floor heating system is for indoor applications in dry rooms only. As with any other underfloor heating system, it will be most effective if the underfloor is well insulated.

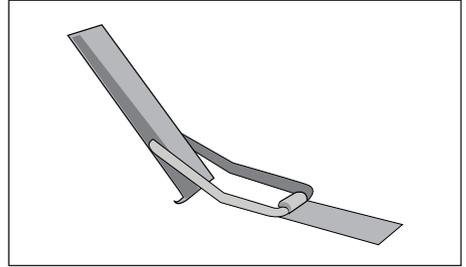
The following directions will guide you step-by-step through the installation process. Please read the directions and the safety precautions before you start the installation process.

Thermal resistance	Examples of Flooring	Density
0,05 m ² K/W	8 mm HDF based laminate	>800 kg/m ³
0,10 m ² K/W	14 mm beech parquet	650-800 kg/m ³
0,13 m ² K/W	22 mm solid oak plank	>800 kg/m ³
0,18 m ² K/W	22 mm solid fir planks	450-650 kg/m ³

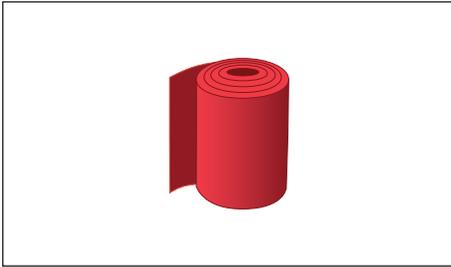
Product overview



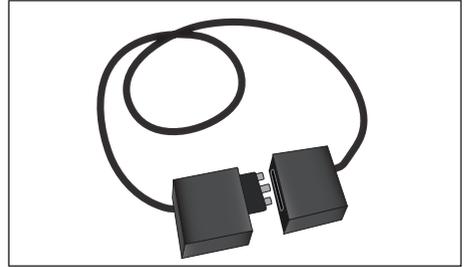
Devidry™ Pro Element



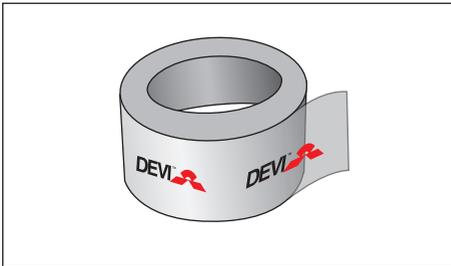
Devidry™ Connection Tool



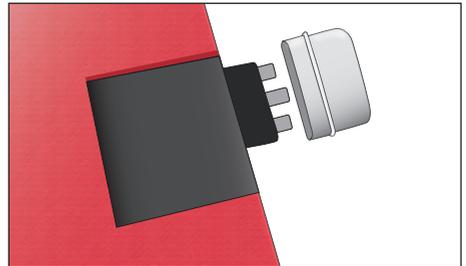
Devidry™ FM



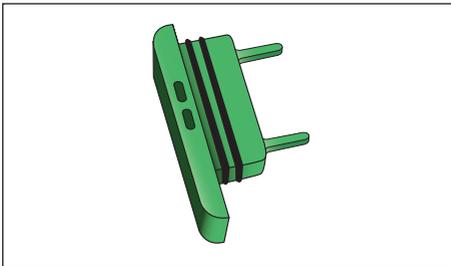
Devidry™ X



Devidry™ Tape



Devidry™ Protection Cap



Devidry™ End Stop

Products supplied for wooden floor constructions

Devidry™ Name	Description
Devidry™ 55	Devidry™ Element, 1-5 m ²

Products supplied for concrete floor constructions

Devidry™ Name	Description
Devidry™ 55	Devidry™ Element, 1-5 m ²

Or:

Devidry™ 100	Devidry™ Element, 1-5 m ²
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Accessories

Devidry™ Name	Description
Devidry™ Pro Kit	Devidry™ Pro Kit:
	• Devireg™ 535 Timer thermostat
	• Devireg™ NTC Floor Sensor
	• Devidry™ Connection Tool
	• Devidry™ Supply cord 4 m
	• Devidry™ and Devireg™ Instructions
	• Devidry™ Warning Label
• Devidry™ Aluminium Tape	
Devidry™ X-25	Devidry™ Extension Cord, 25 cm
Devidry™ X-100	Devidry™ Extension Cord, 100 cm
Devidry™ X-200	Devidry™ Extension Cord, 200 cm
Devidry™ FM-1	Devidry™ Filler Material, 1 m ²
Devidry™ FM-2	Devidry™ Filler Material, 2 m ²
Devidry™ FM-4	Devidry™ Filler Material, 4 m ²
Devidry™ Tape	Devidry™ Duct Tape

Technical Details

Installation must be carried out in accordance with the national regulation and wiring rules for installation

Technical details of Devidry™	
Height	8 mm
Mains voltage	230 V (50 Hz)
Maximum Ampere per Devidry™ System	10 A
IP rating for Devidry™ Element	IP X7
Output	55 W/m ² or 100 W/m ²
Sound reduction value	17 dB
Insulation value μ	8 W/m ² K

Maximum heated surface per Devidry™ Pro Kit (Maximum current limit is 10 Ampere)

Product	Max heated surface
Devidry™ 55	42 m ²
Devidry™ 100	23 m ²

For Devidry™ 55

Floor area	Heated surface	Total power output	Ampere
1 m ²	0.4 m ²	22 Watt	0.10 A
2 m ²	1.4 m ²	77 Watt	0.33 A
3 m ²	2.4 m ²	132 Watt	0.57 A
4 m ²	3.4 m ²	187 Watt	0.81 A
5 m ²	4.4 m ²	242 Watt	1.05 A

For Devidry™ 100

Floor area	Heated surface	Total power output	Ampere
1 m ²	0.4 m ²	40 Watt	0.17 A
2 m ²	1.4 m ²	140 Watt	0.61 A
3 m ²	2.4 m ²	240 Watt	1.04 A
4 m ²	3.4 m ²	340 Watt	1.48 A
5 m ²	4.4 m ²	440 Watt	1.91 A

	This side up
	Heating element must only be installed on top of concrete floor constructions (never on wooden floor construction, never imbedded in concrete)
	Direct floor heating
	The Devidry™ element may be cut here to fit the actual area, as there are no electrical parts in this area
	The Devidry™ element cannot be cut here as there are electrical parts in this area
	For indoor use only
	Read the installation manual before installation
	Double insulated
	<p>DEVI declares that Devidry™ is tested according to the standard for flexible sheet heating elements:</p> <ul style="list-style-type: none"> • EN/IEC 60335-1 Household and similar electrical appliances – Safety – Part 1: General requirements and • EN/IEC 60335-2-96 Particular requirements for flexible sheet heating elements for room heating

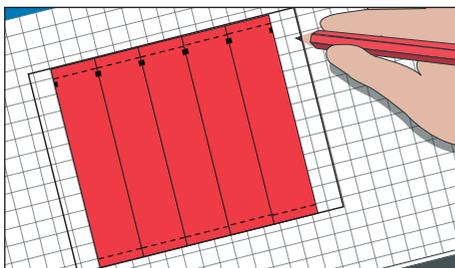
1. Designing the layout

Draw a floor plan of the room and determine the most logical location for the control system and the position of the floor heating elements. Consider the placement of the thermostat to get the most convenient access and make sure the necessary power supply is available.

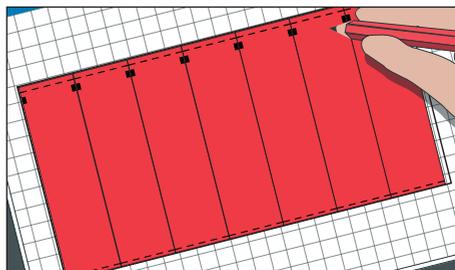
The output cord from the control system will go into the right side of the heating element, so you should start laying the first heat element on the right side of the floor and work towards the left side. Remember to keep at least 70 mm of free space between the skirting/wall and the first heating element for the plug-in connection between the floor heating element and the control system. Use the filler material to fill this space afterwards.

Examples of calculations are provided below to help you work out how many Devidry™ floor heating elements are required. All Devidry™ floor heating elements are one metre wide and the standard length varies from one to five metres. Reduce the length of the elements to the required size as shown in the table.

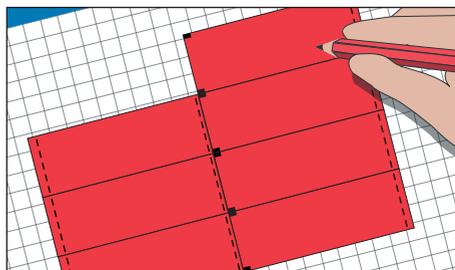
Example 1: When the area is 5 m wide and 6 m long, you will need 5×5 Devidry™ floor heating elements, plus 5 square metres of filler material.



Example 2: When the area is 3.75 m wide and 7.10 m long, you will need 6×4 m Devidry™ floor heating elements. Cut the 4 m long elements down to 3.75 m. You will also need 0.38 square metres (buy 1 square metre) of filler material. A Devidry™ floor heating extension cord is available as an accessory. Use the cord only in the event that you are unable to make a direct connection between two adjacent floor heating elements.



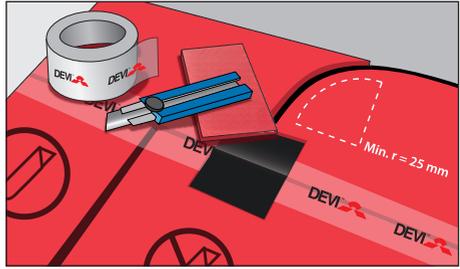
Example 3: When placing the elements after each other you should always cut away the cold end (25 cm) of the element to avoid cold zones.



Installing Supply Cord or Extension Cords:

The cords must only be placed in the filler material and not over/in the heating element.

The filler material shall be cut so it envelops the cords. The Devidry™ X can withstand maximum 10 A.



Element size	Standard length	Minimum length
1 m ²	1 m	0.5 m
2 m ²	2 m	1.5 m
3 m ²	3 m	2.5 m
4 m ²	4 m	3.5 m
5 m ²	5 m	4.5 m
1 m wide filler materials without heating (1, 2 and 4 m)		

Make sure that no hot spots develop when using the floor heating system. Avoid hot spots by ensuring that the heat from the floor heating is homogeneously released to the area you wish to heat and that there is free space (ventilation) under the furniture.

When designing the layout, make sure not to install Devidry™ heating element under permanent or built-in cupboards or fire places/ovens. Devidry™ have to be separated from other heat sources such as chimneys. Instead Devidry™ filler material should be used.



2. Preparing the base

Before you start installing the product, please ensure that the floor is:

- permanently inflexible
- dry
- flat and regular
- dust- and fat-free
- free from any sharp objects

Use a powerful vacuum cleaner to remove all dust from the floor.



UK

3. Calculating current limitations

The Devidry™ floor heating system should be connected in accordance with national standards and wiring rules.

Up to two Devidry™ systems can be connected to one thermostat considering the maximum current of the thermostat. (Please refer to the thermostat marking for current limitations). Maximum current per Devidry™ system is 10 Ampere.

In the following tables you will find maximum heated surface per Devidry™ Pro Kit and an overview of the total power output of the systems.

Maximum heated surface per Devidry™ Pro Kit (10 A limit per system)

Product	Max heated surface
Devidry™ 55	42 m ²
Devidry™ 100	23 m ²

For Devidry™ 55 (Mains voltage 230 Volt and 50 Hz)

Floor area	Heated surface	Total power output	Ampere
1 m ²	0.5 m ²	22 Watt	0.10 A
2 m ²	1.5 m ²	77 Watt	0.33 A
3 m ²	2.5 m ²	132 Watt	0.57 A
4 m ²	3.5 m ²	187 Watt	0.81 A
5 m ²	4.5 m ²	242 Watt	1.05 A

For Devidry™ 100

Floor area	Heated surface	Total power output	Ampere
1 m ²	0.5 m ²	40 Watt	0.17 A
2 m ²	1.5 m ²	140 Watt	0.61 A
3 m ²	2.5 m ²	240 Watt	1.04 A
4 m ²	3.5 m ²	340 Watt	1.48 A
5 m ²	4.5 m ²	440 Watt	1.91 A

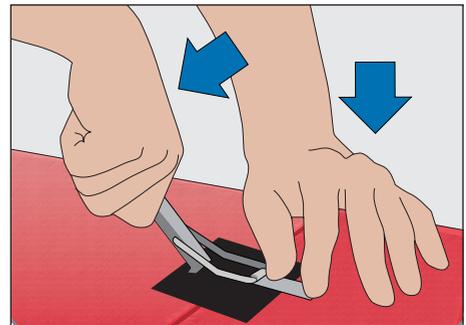
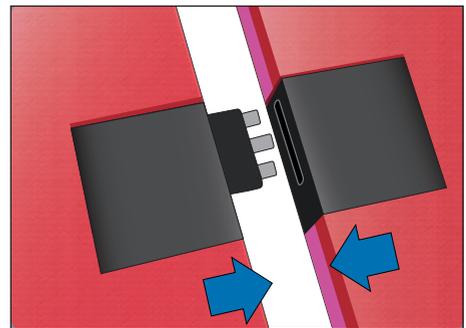
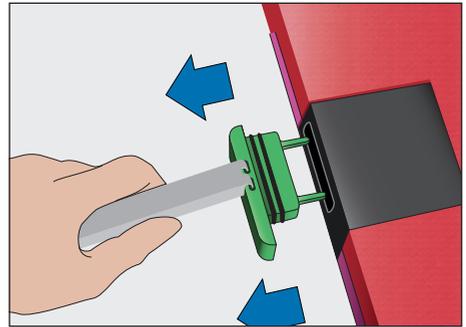
4. Connecting the Devidry™ elements

Bulges on the element may occur, but will disappear when the Devidry™ system is heated. See section 8. All elements are equipped with an end stop to insulate the connector and protect the connection against moisture. Remove the end stops with the special tool, just before making the connection with the next heating elements. If all end stops are taken out at once, remember to leave the end stop in the last element.

Connect the plug-in connection of the second element into the plug-in connection of the first element. Put the male and female connector together by hand before using the connector tool to push the elements tight together. Check that the plug-in connection fits correctly and permanently. Continue with the subsequent elements in the same manner.

Make sure that all plug-in connections fit straight and without any mechanical stress. Discontinue the floor heating installation process in the event of damage to one or more components. Incorrect installation may cause problems and/or defects to the floor heating elements. Please take precautions not to drop sharp objects on the heating elements.

Make sure that the end stop in the last element is in place before the floor covering is laid. Keep the end stops if you intend to remove/reposition your floor heating system later.



5. Cutting the Devidry™ floor heating element to size

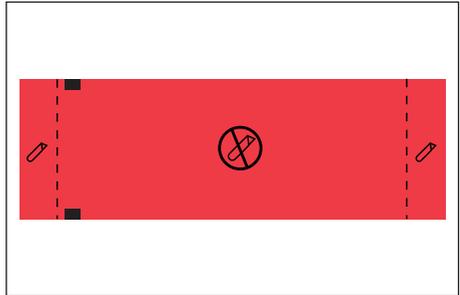
Each end of the Devidry™ heating element consists of 25 cm without electrical parts inside. The Devidry™ heating element may only be cut at the far ends where there are no electrical parts inside as marked on the product below.

Markings and symbols have been printed on the Devidry™ heating elements:



	Cutting area
	Do not cut area. Electrical parts inside. If cut, element will be destroyed.

To cut the element to size:
Carefully measure the piece you wish to cut off and simply cut with a sharp knife.

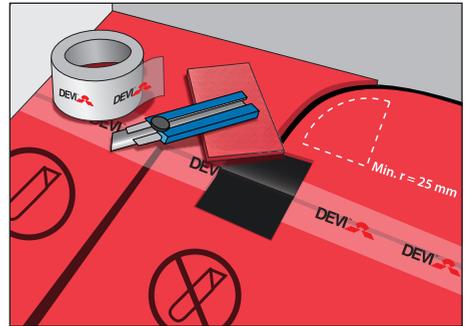


6. Filling up the remaining space

At this point all connections between the elements should be aligned and connected and as much of the floor as possible should be covered with Devidry™ elements. The space without Devidry™ heating elements should be covered with the Devidry™ Filler Material to ensure an even and homogenous floor surface.

A lineal (to cut along) and a wooden plate (behind the Devidry™ element) can be used when cutting the Devidry™ Filler Material to avoid cutting into the electrical parts and ensuring a straight cut.

To be certain that the distribution of the floor heating elements in your room is correct, we suggest you make everything fit before you secure the elements permanently. It is most important to make sure that all plug-in connections are perfectly aligned to allow the flow of electricity from one element to the next. Put the floor heating elements plus any filler materials down as shown in the lay-out. Once you have correctly positioned all floor heating elements and you have cut the filler material to size, you can proceed with the permanent installation as explained in the following steps.



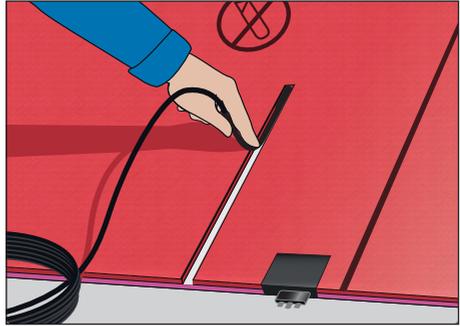
7. Mounting the Devireg™ Thermostat

The electrical installation must be done by an authorised electrician. Mount the Devireg™ thermostat to the wall. The Devireg™ should be installed in accordance with the instruction manual supplied with the thermostat and the Devidry™ Pro Kit.

Cut a piece of material from the filler material to make room for the Devidry™ Supply Cord between the Devireg™ thermostat and the Devidry™ Pro element.

Make sure not to fold and/or squeeze the cord between the thermostat and the floor heating element but make room for the cord in the filler material. Minimum bending diameter is 5 cm.

To place the sensor in the right spot, remove the cut-away area in the Devidry™ Pro heating element and place the sensor down into the groove.



8. Checking the Devidry™ floor heating system

Check that all work has been carried out in accordance with directions before testing the Devidry™ floor heating system. Testing may commence when everything has been correctly connected. Read the directions for the control system before you proceed. Set the temperature at maximum 35°C. After a short while you will notice the Devidry™ floor heating elements are warming up.

If the floor heating elements are not warming up to the same temperature, the plug-in connections should be checked once again. Remember to switch off the Devidry™ system before checking.

9. Laying the top floor

Please consult the floor manufacturer to ensure that the floor covering is suitable for floor heating. The final floor covering (laminated or parquet) can be laid when the Devidry™ heating system has been tested.

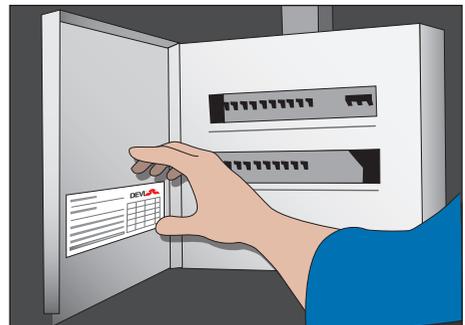
However, observe the maximum floor surface temperature according to the flooring manufacturer. For most wooden floor products, the temperature is usually around 27°C. All temperature settings must be set some degrees higher to compensate for the heat resistance in the top flooring.

According to ISO 13732-2, the comfortable floor surface temperature depends on the flooring material.	Soft wood (pine) 22.5 - 28°C
	Hard wood (oak) 24.5 - 28°C

Thermal resistance [m ² K/W]	Examples of Flooring	Details	Approximate setting for 25°C floor temperature
0.05	8 mm HDF based laminate	> 800 kg/m ³	28°C
0.10	14 mm beech parquet	650 - 800 kg/m ³	31°C
0.13	22 mm solid oak plank	> 800 kg/m ³	32°C
<0.17	Max. carpet thickness suitable for floor heating	acc. to EN 1307	34°C
0.18	22 mm solid fir planks	450 - 650 kg/m ³	35°C

10. Warning label

The warning label that is included in the Devidry™ Pro Kit must be filled out and placed in the distribution board. For future reference it is important to fill in, which room and how many Devidry™ elements that have been installed, by whom and the installation date. Furthermore, the room should be drawn in the manual so it is easy to see how the elements have been positioned in the room in the future. See layout paper on next page.

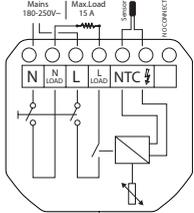
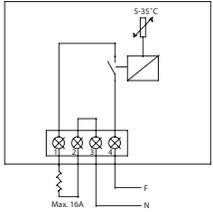
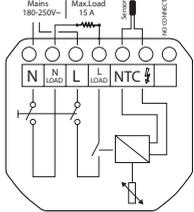


List of Devireg™ thermostats

Use 1 of the 3 below mentioned thermostats with a maximum set point of 35° C.

Use of other thermostat/setting will make the warranty void!

UK

Type	Description	Picture	Wiring Diagram
Devireg 535	<p>Programmable flush mounted electronic thermostat with room and floor sensor. Maximum set point is 35°C.</p> <p>Devireg™ 535 is included in Devidry™ Kit Pro</p>		
Devireg 130M	<p>Surface mounted electronic thermostat with floor sensor only. Maximum set point is 35°C.</p>		
Devireg 530M	<p>Flush mounted electronic thermostat with floor sensor only. Maximum set point is 35°C.</p>		

Safety Precautions

- Use the floor heating element for the purposes described in the installation manual only.
- Devidry™ must always be installed with the Devidry™ Pro Kit.
- The Devidry™ floor heating system is to be supplied through a residual current device having a rated residual operating current not exceeding 30 mA.
- Means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules.
- All the used Devidry™ elements must have the same area output.
- The Devidry™ elements are not to be installed on irregular surfaces.
- Bending diameter of the floor heating elements is 100 mm.
- Devidry™ heating element must be separated from other heat sources.
- Be careful not to separate or move the heating elements during installation.
- The Devidry™ heating element must not be installed at ambient temperatures below 5°C.
- The Devidry™ floor heating system is only for indoor use.
- When storing the Devidry™ floor heating element keep it rolled as from factory or laying flat, never standing unrolled up against a wall/ in vertical position
- Do not install or use the floor heating system after one or more components have been damaged.
- Do not allow home repairs under any circumstances. Repairs must be carried out by qualified electricians. Faulty repairs may cause personal injury or damage to property.
- Do not use the floor heating in combination with parts that are not recommended, installed or supplied by DEVI.
- Use original parts of the Devidry™ floor heating system only. The warranty for the entire system and for the separate parts becomes null and void if parts from other manufactures have been used.
- Make sure that no hot spots develop when using the floor heating system. Avoid hot spots by ensuring that the heat from the floor heating is homogeneously released to the area you wish to heat. Do not install the floor heating element under permanent or built-in cupboards (min. 6 cm air).
- Do not use the Devidry™ floor heating system if the system is wet.
- Warning label should be filled out and placed next to the distribution switchboard.
- The Devidry™ floor heating system is only to be used with the Devidry™ extension cords (The Devidry™ X). Do never cut the extension cords.
- Do not buckle the supply cord and the extension cords; do not have them run across hot and/or sharp objects.
- Unroll the extension cords entirely to prevent the cords from overheating.
- Do not pull the cord or the floor heating element to undo a plug-in connection. Always use the connection tool.
- If the extension or supply cord is damaged, it must be replaced by the manufacturer, its service agent or similar persons in order to avoid a hazard.

- Connect the floor heating to 230 Volt and 50 Hz only.
- Do not allow needles, sharp objects, liquids and/or other electricity-conducting objects/fluids to make contact with the floor heating system.
- The printed side of the heating element must be visible when placing the element showing the symbol:
THIS SIDE UP ↑↑
- Save the manual together with the warranty papers for further use.

The 5 Year DEVI Warranty:

You have purchased a DEVI heating system which we are sure will serve to improve the comfort and economy of your application.

DEVI provides superior electrical heating solutions for total climate control in and around homes and buildings. DEVI offers a complete product program with Deviflex™ heating cables or Devimat™ heating mats, Devireg™ thermostats, Devidry™ and Devidry™ heating systems, Devifast™ fixing strips and Devi Self-limiting heating cables combined with additional products completing the product program.

This 5 year warranty applies to Devidry™ heating elements and DEVI Self-limiting heating cables, connection units and DEVI crimp set for self-limiting heating cables.

Should you, against all expectations, experience a problem with your DEVI product, you will find that DEVI offers a 5 year warranty from the date of purchase on the following conditions:

During the warranty period DEVI shall offer a new comparable product or repair the product in case the product is found to be faulty by reason of defective design, materials or workmanship. Repair or replacement shall be carried out solely at DEVI's discretion. DEVI shall not be liable for any consequential or incidental damages including, but not limited to, damages to property or extra utility expenses.

The warranty shall be valid only if the WARRANTY CERTIFICATE is completed correctly and in accordance with the instructions, and provided the fault is submitted to the installer or the seller without undue delay and proof of purchase is provided. Please note that the WARRANTY CERTIFICATE must be completed in English or local language.

An extension of the warranty period following repairs undertaken under warranty cannot be granted.

The DEVI Warranty shall not cover any damage caused by incorrect conditions of use, incorrect installation or if installation has been carried out by non-authorized electricians. All work will be invoiced in full if DEVI is required to inspect or repair faults that have arisen as a result of any of the above.

The DEVI Warranty shall not extend to equipment which has not been paid in full.

DEVI will, at all times, provide a rapid and effective response to all complaints and inquiries from our customers.

The warranty explicitly excludes all claims exceeding the above conditions.

5 YEAR WARRANTY
Warranty Certificate

The DEVI Warranty certificate is granted to

Name:

Address:

City:

Country:

Telephone:

UK

Attention:

*The Warranty Certificate must be completed correctly for the Warranty to be valid.
Please read the Warranty conditions on the previous page.*

Type product:

Material number:

Installed by:

Date:

Supplier Stamp

Date: / -

Article No.: 08090587

Version - 01.02

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10/2012

VIEDJ202

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