

Installation Instructions

GB

The surface heating for Laminate, series FH L

Important: These instructions must be read carefully before commencing the installation procedure. An incorrect installation could damage the heating system and suspend the guarantee.

Consider during the selection of the laminate that it can be adapted for electrical heating systems. Consult your seller.

Product information

The purpose of the heating elements the series **FH L** is the installation directly underneath the laminate floor surface (dry laying). The heating elements **FH L** are installed to maintain a comfortable room temperature. We recommend the use of a comfort thermostat with floor sensor in order to assure a high quantity of comfort, economy and security.

The heating elements are easy to install, they do not require additional installation efforts and no further maintenance.

The manufacturer issues a guarantee of 10 years for the heating conductor. This guarantee does not include any preparatory work or replacement of surface covering material. Please pay careful attention to the information given on the guarantee card. The specified entries (measured values made on the completed installation) must be recorded on that guarantee card. The manufacturer will not accept responsibility for any faults which can be attributed to measurements which either have not been made and recorded at all or which have been made incorrectly.

Technical data

Rated voltage	230 V AC
Rated Heating Capacity	160 W/m ²
Operating temperature	60° C
Thickness of the elements	1,5 mm
Distance between meanders	4 cm
Connection cable	2 x 4 m
Insulation Heating Resistor	FEP (Teflon©, a trademark of Dupont)
Shielding braid	Copper
Cable sheath	FEP (Teflon©, a trademark of Dupont)
Protection class	IP X7

Surface area in m ²	Dimensions in cm	Capacity in Watt	Resistance in Ohm
0,75	50 x 150	120	440
1,0	50 x 200	160	330
1,5	50 x 300	240	220
2,0	50 x 400	320	165
2,5	50 x 500	400	132
3,0	50 x 600	480	110
3,5	50 x 700	560	95
4,0	50 x 800	640	83
4,5	50 x 900	720	73
5,0	50 x 1000	800	66
6,0	50 x 1200	960	55
7,0	50 x 1400	1120	47
8,0	50 x 1600	1280	41
9,0	50 x 1800	1440	37
10,0	50 x 2000	1600	33

Scheduling the installation

Before the installation procedure, compile a layout plan, which shows the arrangement of the heating elements. Also record on this layout plan the place of the thermostat and the position of the floor sensor as well as the zones which will not be heated, for example built-in furniture, cupboards, socles, facilities, bathtubs etc.

Afterwards calculate the heatable surface. Select the suitable heating element according to the above mentioned schedule. If the heatable surface is bigger than 10 m² apply two or more heating elements. Considering the length of the selected heating element, list the arrangement of the element on the layout plan. The distance between the heating element and the walls must not be smaller than 5 cm. Assure that the connection cables (cold conductors) can be installed at the thermostat. If the length of 2x4 m of each connection cable is not long enough, instruct the installer to extend them.

On the figure 1 and 2 are examples for layout options.

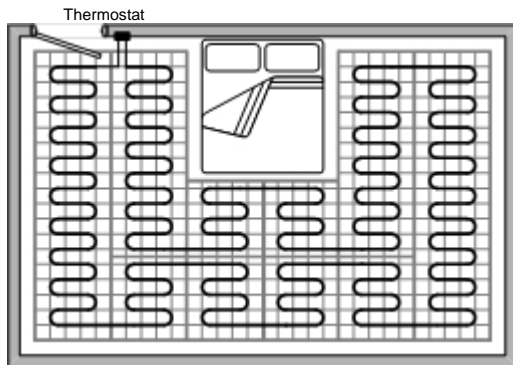


Figure 1, one heating element

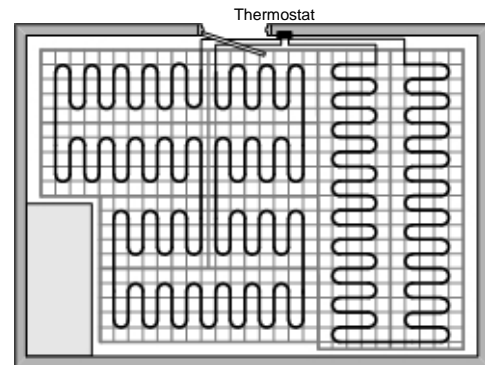


Figure 2, two heating elements

Installation of the heating elements

The heating elements FH L are constructed so that they can be laid fast and uncomplicated. The installation must be carried out by a qualified electrician and be made strictly in accordance with the appropriate Standards and Regulations.

For safety reasons a switching device should be used which ensures an all-pole disconnection of this permanently fixed equipment. This can be, for example, a 2-pole F1 Protective Switch (with a 3 mm gap.)

Diagrammatic Information – Installation example

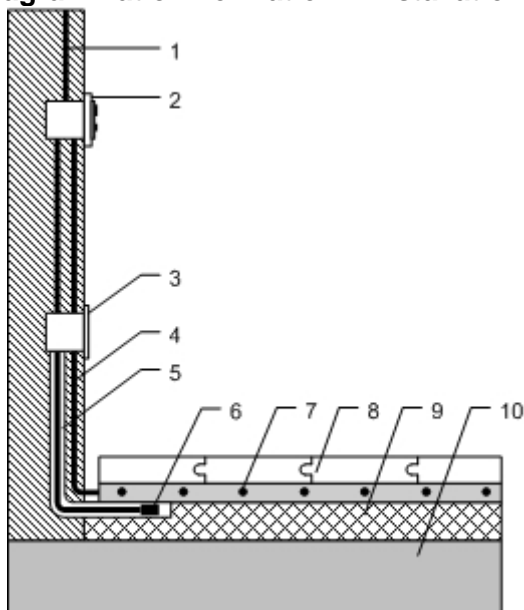


Figure 3

- 1 – Mains connection ~ 230 V
- 2 – Thermostat
- 3 – In-Wall-Distributor Socket
- 4 – Connection cable of the heating element
- 5 – Empty pipe for floor sensor
- 6 – Floor sensor
- 7 – Heating element
- 8 – Laminate
- 9 – Warmth-/Impact-sound insulation
- 10 – Rough floor surface

- For the heating insulation lay out the insulation boards on the rough floor surface which must be cleaned before from dirt and dust.
- Cut a recess in the rough floor surface or in the insulation board for the floor sensor. The floor sensor should be located underneath the heating element and between two heating cables and at least 10 cm away from the wall. It is recommended to insert the floor sensor in an empty pipe (see figure 3). This allows, if necessary, to replace the floor sensor, without opening the ground floor.
- Lay out the heating elements according to your lay out plan. The heating elements will be placed on the heating insulation with the adhesive side down. Cut the glass fibre webbing accurately without causing damage to the heating cable (see figure 4).

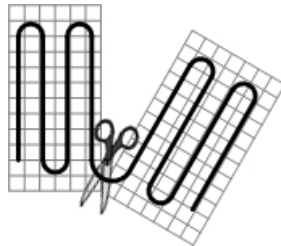


Figure 4

During the lay out of the heating element assure oneself that the floor sensor is located between two meanders of the heating cable. The floor sensor must not get in contact or cross the heating cable (see figure 5).

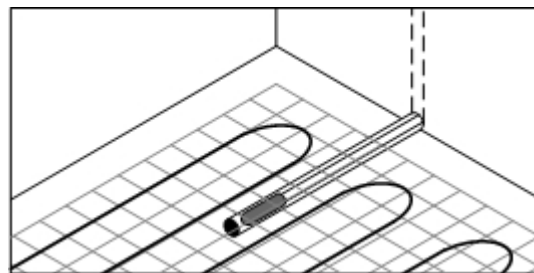


Figure 5

It is strictly forbidden to shorten the heating element or the heating cable.

- Lay the connection cables (cold conductors) to the connection point (thermostat). Disallow that the connection cables cross with each other or with the heating cable. It is allowed, if necessary, to shorten or to extend the connection cables (cold conductors).
- Measure the resistance of the heating element and record the value on the guarantee card. Assure oneself that the measured value of the resistance is conform to the recorded value on the guarantee card.
- Install all the necessary electrical utilities. By the use of two or more heating elements connect the cold conductor in a parallel circuit.
- Switch on the electrical floor heating elements for a certain time and assure oneself that all the heating elements operate properly.
- Lay the laminate floor. At the same time use soft footwear in order to avoid that the heating cable gets damaged.

Use for heat insulation soft materials – a soft impact sound insulation or an insulation with good heat insulation characteristics and a minimum thickness of 3 mm - which is specified for laminate and wooden floor. To receive the best heating results, the whole floor construction combined (generally insulation and laminate) should not exceed the thermal resistance of **0,15 m²K/W**.