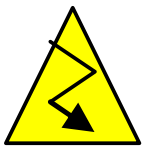

KLIMA Heating film for Laminate and wooden floor covering

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Use of Warnings and Symbols



Attention : Information referring to technical requirements. Non adherence can lead to malfunction



Danger! : Warning of dangerous situations that can lead to death or severe injury, or cause extensive material damage.

Before starting the installation it is necessary to read the instructions thoroughly !

1. The Klima heating film should only be installed in dry places, IPX1
2. The Klima heating film may only be used as sub-heating. There should always be another heating element with sufficient capacity that can be used at the same time. Keep windows and doors closed during heating periods.
3. The ambient temperature where the heating foil is installed should be above 5 degrees Celsius.
4. The heating film should always be installed together with an RCD.
5. The heating film should be placed on 6mm (minimum) polystyrene insulation.
6. A 0.2 mm age resistant PE film should be placed over the heating film before installing the laminate floor.
7. The heating film must not be placed under fixed furnishing such as wardrobes, inner-walls, kitchen units etc, as this will cause overheating.
8. The heating film should be separated from other heat sources like lights and chimneys. The distance should be at least 30 cm.
9. The floor covering must have a minimum thickness of at least 5mm, but must not have higher thermal resistance than 0.17 W/m²K.
10. Thick rugs or other insulating materials should never be placed on a floor with electrical heating.
11. The thermostat needs to have the floor sensor properly installed to work correctly.
12. The maximum current distributed through each heating film is 5 A.
13. The Klima thermostat can switch up to 16 A. When switching above 16 Amps a Contactor must be used.
14. The temperature in the room is controlled with a room thermostat and the floor sensor is protecting the floor from getting hotter than 27 degrees Celsius for maximum safety and comfort.
15. The heating films should be connected with a double insulated cable (supplied).
16. The heating film can only be fixed with the tape that is included in the installation kit.
17. Warning: The parquet, laminate, or wooden floors must have a minimum thickness of 5mm and a maximum thickness of 22 mm. When there is another thickness or any doubt whether the wood can be used in combination with floor heating, please contact the manufacturer of your wooden floor.



The wooden or laminate floor covering the heating film need to have a minimum thickness of 5mm. If other floor coverings are requested, ask heating film supplier for advice.

KLIMA Technical Helpline: 0870 411 1115

Important considerations



WARNING!

The KLIMA heating film requires 230V and the installation must be supervised by a qualified electrician. The electrical installation should be made in accordance with the national regulations.



- The rating on the heating film must comply with the rating of the thermostat, the circuit breaker and if necessary the contactor.
- Correct wiring practice must be observed. All electrical connections must be made by a qualified electrician.
- Installation must comply with the wiring regulations, I.E.E wiring regulations, 16th edition and all current building regulations.
- Cables must not come in contact with the heating film
- The heating film must be installed together with a Residual Current Device (RCD) with a maximum breaking current of 30mA.

Content in the installation Kit (picture. 1)

1. KLIMA heating film
2. Thermostat with floor sensor
3. Cable conduit
4. Foil crimp connections
5. RKK cables black 1,5mm²
6. RKK cables blue 1,5mm²
7. Insulation PVC tape
8. Warning labels
9. Installation Instructions



Picture. 1

Additional equipment and material necessary for the installation

1. Age resistant Polyethylene film 0,2mm
2. 6 mm Polystyrene (PS) insulation
3. Crimp connection tool
4. RCD if this is not already included in the electrical installation

Installation planning



Before starting to lay the heating film, make a sketch or drawing of the installation (Picture. 2):

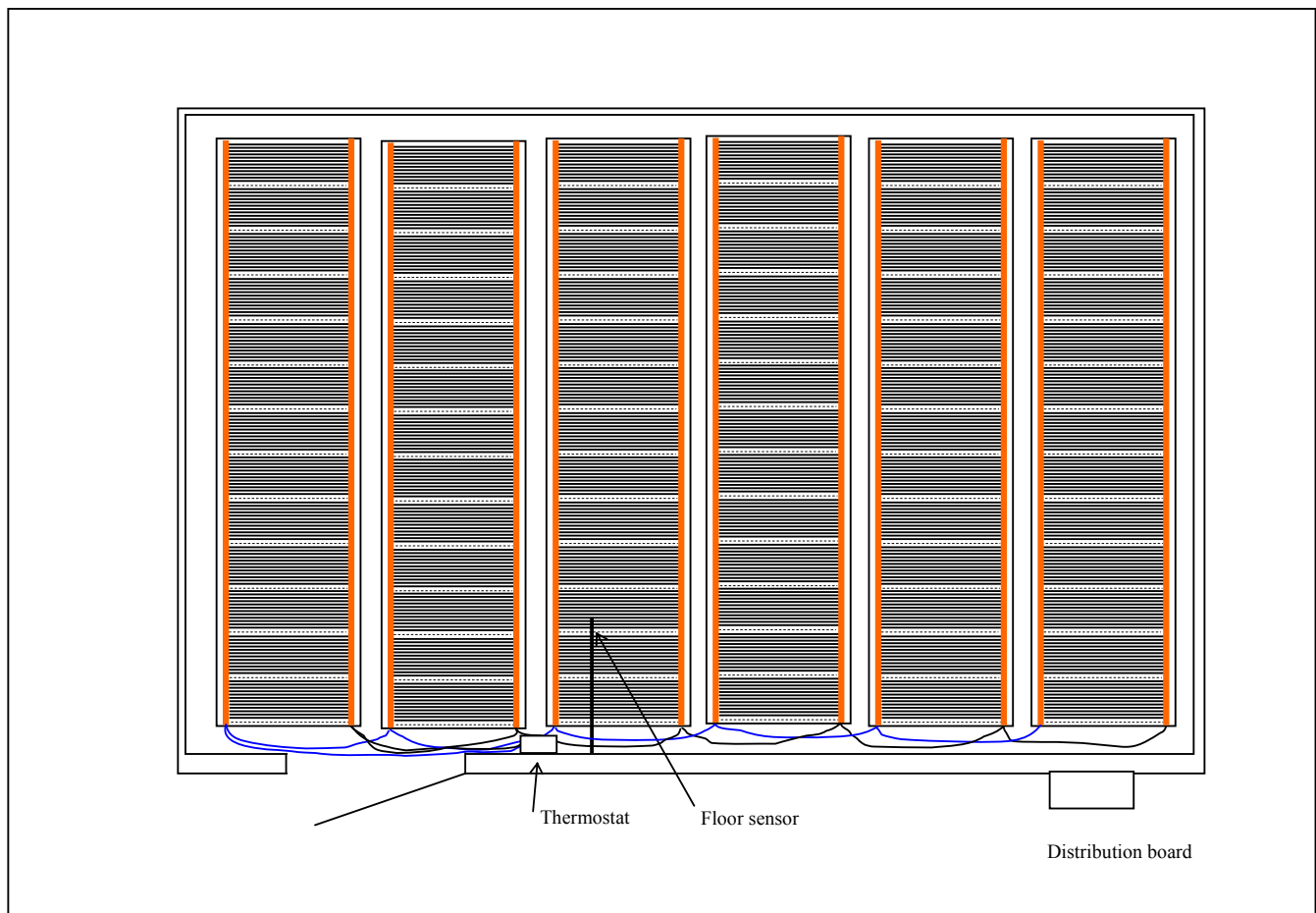
Plan where the thermostat should be placed.

- The thermostat should not be placed in direct sunlight.
- It must be convenient for the user and near to the electrical supply, at a height of 1.4 m approx.

Plan where the wiring and the connection to the electrical supply should be placed.

Plan the layout for each heating film panel.

- The heating film must be placed side by side with no gaps.
- The heating film must cover as much floor area as possible.



Picture. 2

Installation procedure

1. Cover the surface with heating film

1.1 Make sure the floor is clean and free of dust. (Picture 3).

1.2 Position the thermostat. (Picture 4).

1.3 Cut a track in the wall and the floor for the
- Thermostat & floor sensor (make a smooth bend at floor level for the sensor conduit).
- The track for the conduit must end in between two heating panels at 50cm from the wall.

1.4 Push the floor sensor into the conduit.

The tip should be visible at the end of the conduit (picture 5), but it may not stick out. Place the sensor in the middle of two rows of heating film.

1.5 Cover the end of the conduit with the small grey cap, which is supplied with the system. (Picture 6).

1.6 Install the flexible conduit with a smooth bend at floor level. (Picture 7).

1.7 Check the surface of the floor.

To prevent damage it is important that the surface is flat and clean. The maximum height distance that is permitted is +/- 1 mm.

1.8 If the floor is uneven then it is highly recommended that the floor is levelled using a suitable self levelling compound.

1.9 Fill up the track in the floor with suitable floor levelling products



Picture. 3



Picture. 4



Picture. 5

Picture. 6



Picture. 7

Picture. 8

Heating Film for laminate and wooden floor covering: Installation procedure

1.10 Make sure the floor surface is clean, dry and free from grease.

1.11 Lay the thermal PS insulation.

**It must cover the whole surface.
(Picture 8).**

- Tape all joints to prevent any movement between the panels.
- Leave out 30 mm gap for cables along the edge where the connections will be made. (Picture 9).

Change to light footwear!

Make sure that the surface is clean and that no sharp objects can come into contact with or drop down onto the heating film during the installation.

Plan your work in a way that you don't have to step directly on the heating film.

1.12 Roll out the heating film along the edge of the room. (Picture 10)

1.13 The copper can face both up or down. Make sure that the heating film is completely flat without any creases.

1.14 Cut the film only along the perforation as close as possible to the wall. (Picture 11).

1.15 Cover the blind copper ends with a 50x50mm PVC tape.

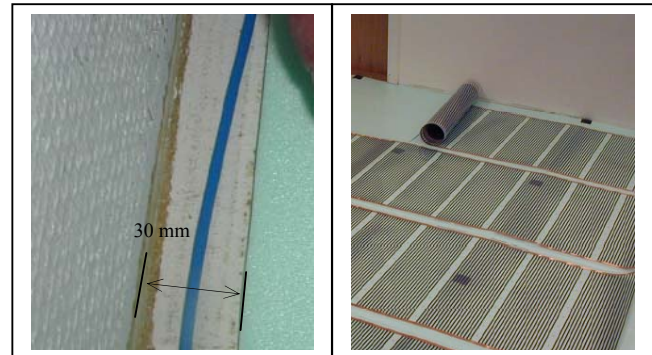
1.15 Roll out the heating film parallel to the first panel.

They must not overlap.

1.17 Tape the foils to the insulation to avoid movements during the floor installation.



Picture. 8



Picture. 9



Picture. 10



Picture. 11



Picture. 12



Picture. 13

Heating Film for laminate and wooden floor covering: Installation procedure

2. When the entire surface is covered with heating film:

Connect the wires

2.1 Protect the heating foil with left over PS insulation while you are working with connections.

2.2 To protect the crimp connection

- Make a 3x6 cm cut-out in the PS insulation just below the connection point.
- Put a piece of PVC tape on the backside of the PS insulation. (Picture 13-15).

2.3 Cut off 6mm PVC insulation at the end of the cable, if only one cable is connected, fold the cable to fit into the connector. (Picture 16).

2.4 Connect the cable to the crimp. (Picture 17-18)
Cables must be long enough and free to move and not subjected to mechanical loads.

2.5 To connect the crimp with the heating film:
Make sure that the crimp connection is correctly set, max gap 1,3mm

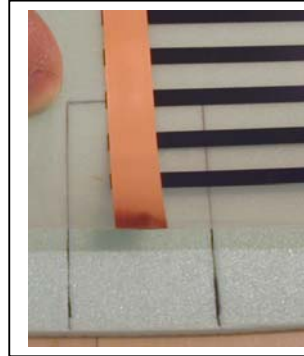
- Place the crimp over the copper band on the heating film.
- Tighten the crimp by hand. (Picture 19)
- Tighten it with the crimp tool in a 45 degree angle from both sides. (Picture 20)

2.6 Connect the heating films in parallel with the double insulated cable. (Picture 21)

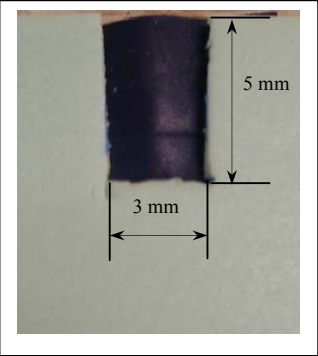
2.7 To insulate the crimp connection:

- Cut out 2 pieces of 50x50mm PVC tape
- Place it on both sides of the crimp connection. (Pictures 22-23)

The tape must end at least 5mm from the edge of the crimp.



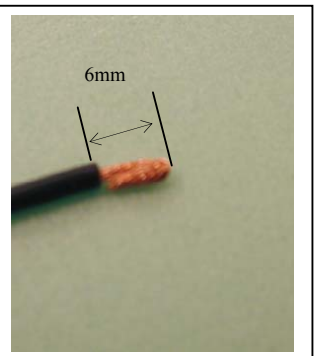
Picture. 13



Picture. 14



Picture. 15



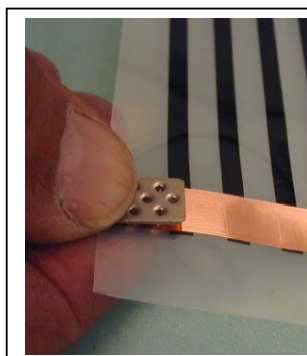
Picture. 16



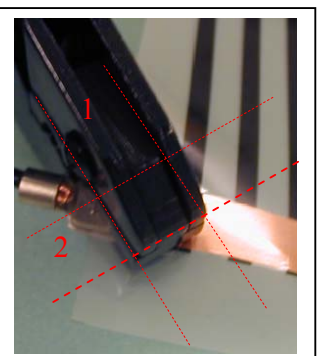
Picture. 17



Picture. 18



Picture. 19



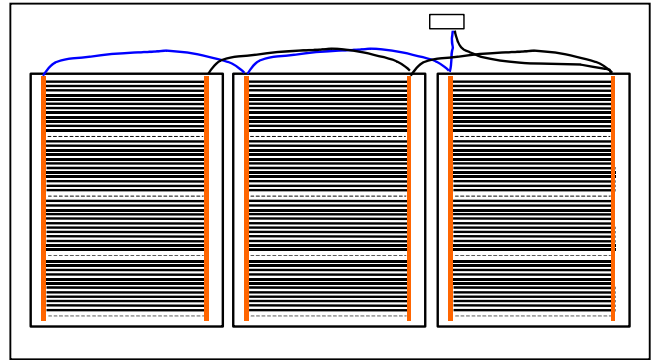
Picture. 20

Heating Film for laminate and wooden floor covering: Installation procedure

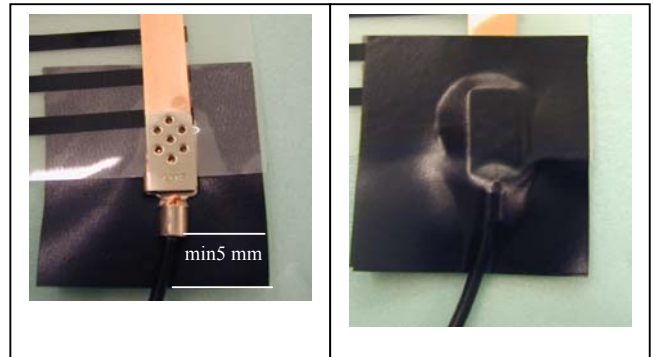
3. Test the installation:

All heating films must be connected during the test.

- 3.1 Measure the overall resistance for the heating films and note this in the protocol under *Measured resistance before covering the floor* (Picture 24)
- 3.2 Calculate the actual power with formula:
Actual power = $52900 / \text{Measured resistance}$
; note in under *Actual power*
- 3.3 Measure the total length of the heating film and calculate the Total Rate Power with the formula: Total Rate Power = total length x rated in W/m (printed on the heating foil) Note that under: *Total Rated Power*
- 3.4 Make a sketch or take a photo for documentation of the installation.



Picture. 21



Picture. 22

Picture. 23

Picture. 24

4. Cover the heating film:

- 4.1 Cover the heating film with age resistant PE foil with a minimum thickness of 0.2 mm.

Film must overlap 200 mm if it is necessary to use several sheets to cover the surface.

- 4.2 Install the laminate floor according to the manufacturer's instructions.

- Please work with light footwear.
- Protect the heating film, cables and connections with some spare PS insulation.

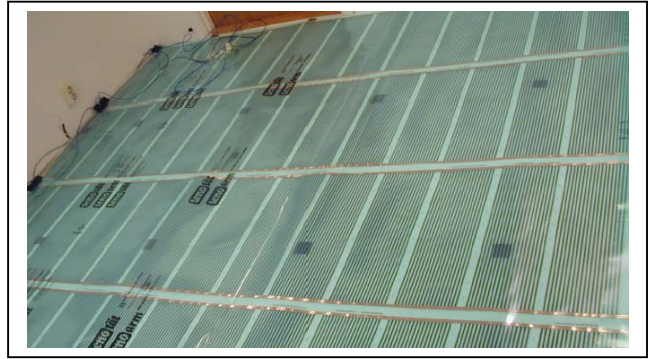
- 4.3 Measure the overall resistance for the heating films and note it in the protocol under: *Measured resistance when floor covering is installed.*

- 4.4 This protocol should be filled in completely. Place the protocol near the electrical cabinet.

In case of a technical problem, the manufacturer will ask for this protocol-card.

- 4.4 Connect the thermostat to the heating film according to the instructions in the thermostat manual.

The thermostat must be limited to a maximum floor temperature of 27 degrees Celsius.



Picture. 25




Picture. 26



Picture. 27

Before you start using the new electrical under floor heating system fix mandatory labels on the distribution board and the thermostat.


Fix to thermostat



Warning!

- KLIMA 9699 Electrical floor heating film is installed under the laminate floor.
- Do not use other surface material than specified in the installation instruction.
- Do not cover the floor with thick rugs or other insulating materials.
- Do not pierce the floor

Fit to distribution board



Warning !

- The building has KLIMA 9699 electrical heated floors in the locations listed below.
- Disconnect all under floor heating from electrical supply before working on the floor.
- Do not pierce the floor with nails or other fasteners.
- Do not use other surface material than specified in the installation instruction.
- Do not cover the floor with thick rugs or other insulating materials.

List of Locations with KLIMA 9252 electrical heating film installed.

1.....

2.....

3.....

4.....

5.....

Installed by: Date :