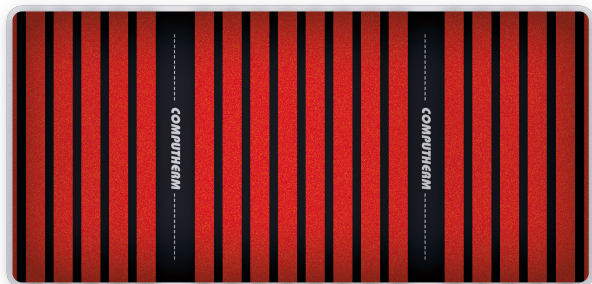


COMPUTHERM ***HF140***



ELECTRIC HEATING FILM

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1. **COMPUTHERM HF140** ELECTRIC HEATING FILM GENERAL INFORMATION

The **COMPUTHERM HF140** electric heating film is a heating device that is specially designed for heating wooden floor, PVC, laminate floor and similar floors thanks to its thin design and uniform heat release. The product is produced in a 50 m long, 0.5 m wide package, which is suitable to cover a surface of 25 m². The product can be adjusted at every 12.5 centimeters, so it fits easily into a room of any design. We recommend its application under the flooring or inside self-leveling concrete. It is suitable for both main and additional heating. For the control of the heating film, a thermostat suitable for controlling electric heating films is required, whose maximum load is greater than the load of the heating film, and which has a floor sensor to avoid the overheating of the floor. In order for the product to function properly, the appropriate voltage and current should be provided, and the thermostat should also have a suitable maximum load capacity.

2. BEFORE INSTALLING THE HEATING FILM

2.1. Calculating the required quantity of heating film

Calculate the useful area of the floor surface to be heated, in which the bathtub, shower cabins, furniture, etc. are not included. When calculating the useful floor area, do not deduct the area of furniture that are at least 6 cm above the ground, because under them the heat release can work properly. Take into account that the heating film must be at least 10 cm away from the walls, and there should be 1-1.5 cm between the heating films. If you cannot cover the entire surface with the help of one strip of heating film, you can achieve it by using several strips of heating film in parallel. Cutting the heating film is only possible at the cutting lines that mark it. It is strictly forbidden to join them and place the heating films on top of each other or cross them. Make sure that the room you want to heat is covered by the product as accurately as possible.

2.2. Security checks

Ensure that the heating film voltage rating is suitable for the service voltage available in the room. Use of appropriate layering is a prerequisite for the safe and efficient operation of the heating film, make sure, that the conditions are met. You will find help for applying the correct layer order in the **2.3.1.** and **2.3.2.** chapters. Check the product for signs of damage, possible material errors and deficiencies. It is forbidden to install a damaged or defective product or repair it at home. Clean the working area, because possible debris and contamination can cause the product's improper operation or failure. It is important that the working place should comply with all applicable protocols (e.g. setting time of subgrade concrete), because ignoring them, like premature installation and commissioning can damage the structure of the floor.

2.3. Getting to know the prescribed layer order

For the proper functioning of the heating film, the optimal delivery of its heating power, and its extended service life, it is essential to use the appropriate layering order.

2.3.1 Layer order in case of installing it directly under wooden floor, PVC, laminate floor and similar floors

From bottom to top, the first layer is the thermally insulated concrete subfloor. In order to avoid heat loss, an XPS insulation layer with a thickness of at least 5 mm must be installed,

into which the metal connectors (clips) can be inserted. It is important to make sure that the insulation layer is suitable for use with heating films. Apply XPS sheets to the entire area of the room to be heated. We recommend that you fix the boards with glass fiber reinforced tape at the junctions. This can be followed by the installation of the floor sensor and the laying of the heating film. It is necessary to install a vapor barrier film on the heating film in order to displace any moisture coming from the upper layers. After that, you can lay down the desired flooring.

The suggested layer order, from bottom to top:

1. Heat-insulating concrete subfloor
2. XPS insulating layer
3. Floor sensor (in a closed-end protective tube)
4. **COMPUTHERM HF 140** electric heating film
5. PE vapor barrier film
6. Desired flooring

2.3.2 Layer order in the case of installation in screed

From bottom to top, the first layer is the concrete subfloor, on which bituminous waterproofing must be applied in order to ensure that the product cannot come into contact with infiltrating moisture or ground water. The PE vapor barrier film is placed on this layer. In order to avoid heat loss, step-resistant thermal insulation must be installed. We recommend that you fix the boards with glass fiber reinforced tape at the junctions. The installation of the floor sensor can follow, and then the **HF 140** electric heating film is installed on the listed layers. Place a PE vapor barrier film on the heating film to displace any moisture coming from the upper layers, then place a protective net. In order to firmly fix the flooring, make a screed on which you can place any flooring after it has set.

The suggested layer order, from bottom to top:

1. Concrete subfloor
2. Bituminous waterproofing
3. PE vapor barrier film
4. Step-resistant thermal insulation
5. Floor sensor (in a closed-end protective tube)
6. **COMPUTHERM HF 140** electric heating film
7. PE vapor barrier film
8. Protective net
9. Screed
10. Flooring

3. SAFETY WARNINGS

- The product is suitable for indoor heating.
- Do not install defective or damaged heating films. It is prohibited to install damaged or defective products or to repair them at home.
- This product must be installed by a qualified person in accordance with this installation guide, the instructions must be adhered to in order to avoid personal injuries or property damages, serious injuries and potentially fatal electric shocks.
- Control the heating film with a suitable thermostat.
- The product cannot be earthed. If it is in direct contact with a conductive surface,

for example with a heat mirror, you should earth it.

- Entrust the installation and commissioning to a professional.
- For installation, use wires suitable for current consumption. Above 10 A, the use of a magnetic switch is recommended.
- The surface on which the film is installed must be free of any debris, protruding nails and screw heads, etc. that may damage the heating film.
- Do not combine/connect the heating film with other types of devices or heating elements.
- Install at a minimum temperature of +5 °C.
- Make sure to use the product according to the instructions.
- You can only cut the film where indicated, if the design of the room requires it.
- Make sure to place the strips of heating films at a distance of at least 2 - 3 cm from each other, and at least 10 cm from the walls of the room. If there is another heating device in the room (this includes any object capable of emitting heat, e.g. a chimney outlet), place the heating film at a distance of at least 30 cm from it, to prevent overheating of the product and in order to avoid its failure.

4. INSTALLATION PROCESS

- In order to prepare the place of installation, if you had an old floor heating, remove all items of it. Make sure the surface is even, if necessary, level the surface.
- Provide a protective tube for the wire located in the wall, in which you'll line the wire for the thermostat. If you don't have this option, you can use a cable channel. Always use a protective pipe in the floor to place the sensor.
- For safe usage, we recommend to use a floor sensor. Create a recess and a cable outlet suitable for placing your protective tube, with the help of which you can lead the cable to the room thermostat.
- Clean the installation area, it must be clean, solid and dry.
- Also, it must be free of any debris, protruding nails and screw heads, etc. that may damage the heating film.
- Be careful during the installation process, do not use tools which can damage the heating film. Do not place a jar full with glue, screed or concrete mix on the heating film, because it can damage the heating film due to its weight and edges.
- Pay attention to the setting time of the adhesive or concrete layer, which is a minimum of 14 days. In order to avoid the damage of the floor structure and failure of the heating film, do not expose the surface to load during the setting time, and don't use the heating film. When embedding in a layer of concrete, wait until the concrete has completely hardened.
- You can start rolling down the heating film after the desired layer order is achieved (**Chapters 2.3.1** and **2.3.2**). Place the strips of heating films parallel to each other. If you have reached the wall, you can cut the heating film to the appropriate size on the dotted line marking the cut. The product can only be cut along these lines. It is worth taking measurements in advance for the most accurate fit.
- Make sure that the heating films placed next to each other are preferably 1 - 1.5 centimeters apart.
- Glue the heating films to the floor at the edges of the products so that the glue does not come into contact with the heating surface, but fixes them to the floor.
- After placing the products, you can start wiring them. Make sure that the wires can handle the required load.
- You can professionally fasten the wires to the heating film with silver-coated clips suitable

for this purpose. First, secure the wire to the stem of the clip using a pair of pliers, then place the clip so that one half is between the copper rails and the foil before crimping them together for proper routing. Insert the clips and wires into the XPS insulating layer so that they do not protrude out of the surface.

- It is also recommended to fasten the wires so that they do not move during the placement of subsequent layers.
- You can connect heating films installed in the same room in parallel. We recommend starting from the outermost product and proceeding to the power source.
- Never leave the connections exposed, cover the clips and the connected cable with a bitumen insulating patch suitable for this purpose. It is important that both the lower and upper sides of the connector are insulated with the insulating patch when insulating.
- It is recommended to tape all visible wires with protective insulation.
- Fix the floor sensor of the thermostat under the heating film so that it does not protrude from the floor plane. Position the sensor so that it is located in the middle of the heating film.
- After laying the film, but before laying the flooring, measure whether the resistance of the heating film matches the planned resistance. If you find the values to be appropriate, you can continue the flooring by following the originally planned layer order.

5. OPERATION AND MAINTENANCE

Install the heating film on the useful floor area of the room. It is also important to keep in mind in the future exactly which areas were covered. Furniture installed later in the useful area can pose a potential danger in terms of overheating of the underfloor heating. In the future, place furniture or any household appliance at a height of at least 6 centimeters from the ground and ensure air flow between it and the floor to avoid overheating or damage. To avoid damage to the floor, set the thermostat to a temperature limit for the floor that does not yet damage the floor. A properly installed heating film requires no further maintenance.

6. TECHNICAL DATA

Supply voltage	230 V AC
Power consumption	140 W/m ²
Length	50 m
Width	0.5 m
Maximum heating temperature*	approx. 45 °C
Protection against environmental impacts**	IP67

* The maximum heating temperature is the temperature of the surface of the product without regulation, when it is permanently switched on.

** The specified value refers to the part of the product where it is not cut.

The **COMPUTHERM HF140** type heating film complies with directives EMC 2014/30/EU, LVD 2014/35/EU, and RoHS 2011/65/EU.



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