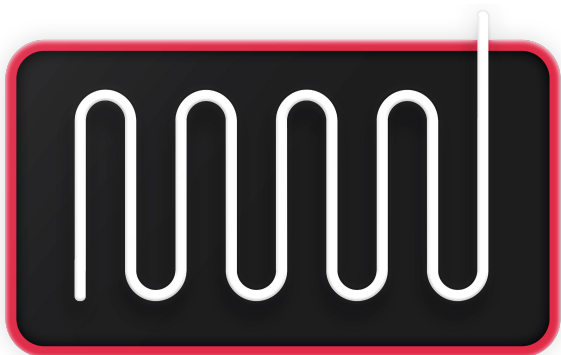


COMPUTHERM ***HM150***



ELECTRIC HEATING MAT

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1. COMPUTHERM HM150 ELECTRIC MAT GENERAL INFORMATION

The heating mat is a heating cable placed on a fiberglass fixing net, which ensures the proper distance and location between heating filaments. The heating mats are available in different sizes: 1 m², 2.5 m², 5 m², 10 m², which, with the help of their dimensional characteristics, provide covering rooms with different features. The **COMPUTHERM HM150** electric heating mat is suitable for both main and additional heating. The product can be installed in the tile adhesive or screed layer, thereby heating the above layer more efficiently. It can be installed both when renovating old flooring and laying new flooring. For the control of the heating mat, a thermostat suitable for controlling electric heating mats is required. 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 MAT

2.1. Choosing the right product size

Calculate the useful area of the floor surface to be heated, in which the bathtub, shower cabins, furniture, etc. are not included. Let's assume that you have a room of 15 square meters, in which the installed equipment occupies a total of 3.5 m² of space from the entire surface. In this case, the useful area is 11.5 m², for which you should choose the 10 m² size **HM150-10** heating mat, considering the surfaces between the carpets and the wall. When calculating the useful floor area, do not deduct the the area of furniture that are at least 6 cm above the ground, because under them the heat release can work properly. The size chart below will help you with this.

Type	Width	Length	Heating surface
HM150-1	0.5 m	2 m	1 m ²
HM150-2.5	0.5 m	5 m	2.5 m ²
HM150-5	0.5 m	10 m	5 m ²
HM150-10	0.5 m	20 m	10 m ²

If you cannot use a heating mat to achieve the full surface coverage, you can use several heating mats in parallel to implement it. For selection, also consider the following:

The mesh of the heating mat can be cut to fit the given room as well as possible. If necessary, the heating cable can be disconnected from the fiberglass fixing net. Plan the direction you want to place the heating mat. Cutting, splicing and crossing the heating cable is strictly prohibited, so be sure to buy a product of a size that fits exactly in the given room.

2.2. Security checks

After unpacking the product, check that it is the right product in the packaging. After that, measure the resistance of the heating mat, which may differ by a maximum of $\pm 5\%$ from the values given in the table below.

Type	Resistance	Supply current	Power (consumption)
HM150-1	352.67 Ohm	0.65 A	150 W
HM150-2.5	141.07 Ohm	1.63 A	375 W
HM150-5	70.53 Ohm	3.26 A	750 W
HM150-10	35.27 Ohm	6.52 A	1500 W

Ensure that the heating mat 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 mat, make sure, that the conditions are met.

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 mat, the optimal delivery of its heating power, and its extended service life, it is essential to use the appropriate layering order. Moving from bottom to top, the first layer is the concrete subfloor, on which the thermal insulation of the subfloor is located (important, because otherwise a large heat loss must be expected). Since the product cannot come into direct contact with the thermal insulation, we must apply a waterproof layer, and the screed must be surface-treated with a deep primer and an adhesive bridge for adhesion. The **COMPUTHERM HM150** electric heating mat is built on top of this. In the case of a tiled surface, the tile adhesive is placed on the heating mat, and then the flooring on top of it. In the case of other direct surface heating, for example PVC, laminate floor, boat floor, etc., the use of a thin estrich layer is recommended.

The suggested layer order, from bottom to top:

1. Concrete subfloor
2. Scaled thermal insulation layer
3. Screed with a deep primer and surface-treated with adhesive bridge
4. Floor sensor placed in the screed (in a protective tube with a closed end)
5. The **COMPUTHERM HM150** heating mat
6. Tile adhesive or thin estrich layer (in case of PVC, laminate floor, boat floor, etc.)
7. Flooring

3. SAFETY WARNINGS

- The product is suitable for both indoor and outdoor heating.
- Do not install defective or damaged heating mats. 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 mat with a suitable thermostat.
- The product is earthed, so be sure to connect the earth wire as well.
- Entrust the installation and commissioning to a professional.
- For installation, use wires suitable for the power consumption.
- The surface on which the mat is installed must be free of any debris, protruding nails and screw heads, etc. that may damage the heating mat.
- Do not combine/connect the heating mat 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. For safety reasons, the underfloor heating system cannot be built into a wall or other covered surface, only into the floor.
- **NEVER CUT THE HEATING CABLE OF THE HEATING MAT!** If you need a shorter mat choose a different size heating mat.
- If necessary, you can change the location of the mats on the fixing net, but make sure that the distance between two mat sections should be at least 5 cm.
- The manufacturer will assume no responsibility for any possible direct or indirect damages or income losses incurring during the use of the device.

4. INSTALLATION PROCESS

- As a first step, measure the resistance on the heating mat(s) and record the values obtained. Repeat this process after laying the heating mats and after the end of the installation too.
- 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 mat channel. Always use a protective pipe in the floor to place the sensor.
- To connect the heating mat and the cold end, make a recess. The concrete layer must entirely cover the mat with a thickness of at least 10 mm. Pay attention to the applied layer order and its thickness.
- For safe usage, we recommend to use a floor sensor. Create a recess and a mat outlet suitable for placing your protective tube, with the help of which you can lead the mat 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 mat.
- Roll down the heating mat until you reach the first obstacle or wall. Cut the fixing net of the heating mat, without cutting the heating mat located on it, then continue the installation in the opposite direction. Repeat this until the useful area to be heated is completely covered.

- Place the heating mat on the concrete layer. Pay attention that the turns shall be at equal distances from each other. Preventing the heating mat from moving, fix it on the concrete layer.
- Place and fasten the floor sensor between two heating mats at the same distance.
- The second part of the resistance measurement: Measure the resistance of the heating mat and also the heating mat insulation. When measuring the insulation, the resistance between the phase/neutral and the ground wire must be infinite. If you find a mismatch and the previously recorded data, it is likely that the product is damaged. In such a case its installation is prohibited. If you found everything alright, you can continue the installation.
- The subgrade leveling, paving adhesive or concrete mix must not contain sharp materials.
- Be sure to apply the screed layer carefully to prevent the heating mat from displacement. In order to avoid damage, we recommend that you first cover the heating mat with the screed and let it dry before starting to lay the flooring. Spreading the tile adhesive or floor adhesive also requires increased attention, considering that the product might be damaged. The thickness of the tile adhesive should be the same as that of the flooring manufacturer regulations and be sure to cover the heating mat. In the case of embedding in a concrete layer, pay attention to use the right thickness of the concrete layer and to not damage the heating mat.
- Be careful during the installation process, do not use tools which can damage the heating mat. Do not place a jar full with glue, screed or concrete mix on the heating mat, because it can damage the heating mat 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 mat, do not expose the surface to load during the setting time, and don't use the heating mat. When embedding in a layer of concrete, wait until the concrete has completely hardened.
- After installation, measure the product and the insulation resistance again. The measured data must match the previously measured data. If they do not match, it is likely that the product is damaged. Using damaged heating mat is prohibited.

5. OPERATION AND MAINTENANCE

You installed the heating mat in the useful area of the room during the planning process. It's important to pay attention on exactly which areas it covered. The posterior placement of furniture in the useful area can represent a potential danger in terms of overheating of the floor heating. If the installed furniture or any household appliance is located at a height at least 6 centimeters from the ground, and air can flow between it and the floor, then it is unlikely that the underfloor heating system will overheat or get damaged.

6. TECHNICAL DATA

	HM150-1	HM150-2.5	HM150-5	HM150-10
Supply voltage	230 V AC	230 V AC	230 V AC	230 V AC
Supply current	0.65 A	1.63 A	3.26 A	6.52 A
Power (consumption)	150W	375 W	750 W	1500 W
Electrical resistance	352.67 Ohm	141.07 Ohm	70.53 Ohm	35.27 Ohm
Length	2 m	5 m	10 m	20 m
Width	0.5 m	0.5 m	0.5 m	0.5 m
Heating surface	1 m ²	2.5 m ²	5 m ²	10 m ²
Maximum heating temperature*	82 °C	82 °C	82 °C	82 °C
Protection against environmental impacts	IP67	IP67	IP67	IP67

*The maximum heating temperature is the surface temperature of the product under normal conditions and constantly turned on status.

The **COMPUTHERM HM150** type heating mat complies with directives EMC 2014/30/EU, LVD 2014/35/EU, and RoHS 2011/65/EU.



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