

Danfoss 100S Thin Mats Installation Guide

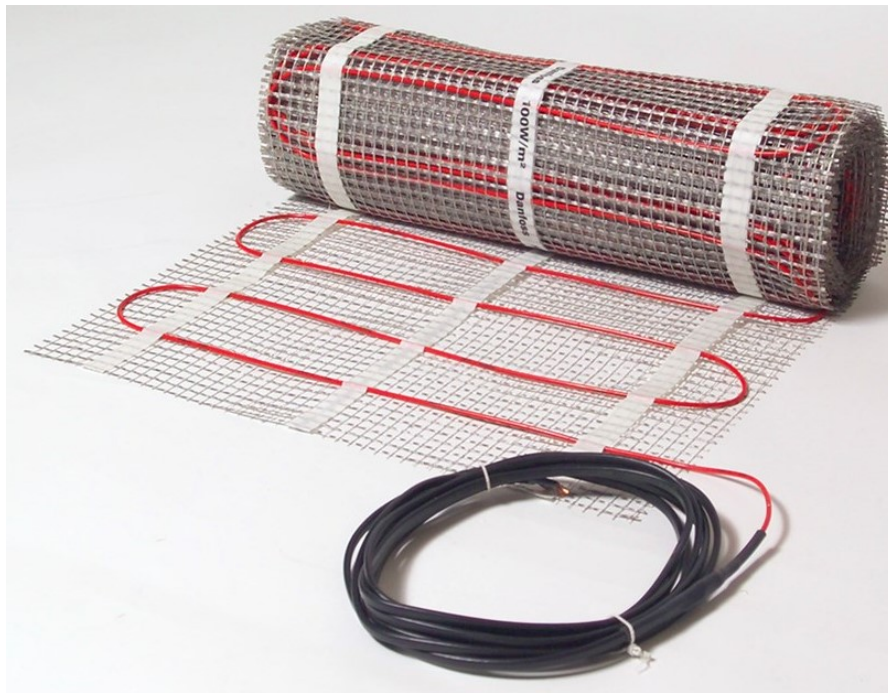
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Danfoss 100S Thin Mats



Introduction

- Thin mats are floor heating elements, based on heating cables mounted with tape on self adhesive mesh for floor heating only.
- To get the full installation guide, warranty registration, product information, tips & tricks, addresses, etc. visit
 - www.danfoss.com
 - www.gb.themanuals.danfoss.com.

Symbol description referring to product marking.

Direct floor heating:



Installation in concrete:



Safety instructions

- Thin mats must always be installed according to local building regulations and wiring rules as well as the guidelines in this installation manual.
- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge, if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved, by a person responsible for their safety.
- Children shall not play with the appliance.
- Cleaning and user maintenance shall not be made by children without supervision.

- De-energize all power circuits before installation and service.
- The screen from each heating element must be connected to earth in accordance with local electricity regulations.
- Residual current device (RCD) protection is required. RCD trip rating is max. 30 mA.
- Thin mats must be connected via a switch providing all pole disconnection that can be locked in the off position.
- The thin mat must be secured with a correctly sized fuse or circuit breaker according to local regulations.
- Thin mats must always be fully embedded with non-flammable material e.g. concrete, screed or tile glue by at least 5 mm incl. tiles.
- Thin mats must always be controlled by a thermostat that limits the floor temperature to max. 35 °C (ECtemp Smart, ECtemp Touch or ECtemp 530M).
- Never exceed the maximum heat density (W/m²) for the actual application.
- In case of a wooden subfloor, the maximum installed output is 100 W/m².
- On concrete subfloor the maximum of 200 W/m² is allowed if: the thickness of the concrete covering above the heating element, is more than 4 cm (40 mm).
- Thin mats are not to be interconnected.
- All thin mats in the same room must have the same heat density (W/m²) unless they are connected to separate floor sensors and thermostats.
- The enclosed label must be filled in and placed adjacent to the distribution board, describing location of the thin mat.
- If supply cord is damaged it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid hazard.
- **The presence of a thin mat must**
 - be made evident by affixing caution signs in the fuse box and in the distribution board or markings at the power connection fittings.
 - be stated in any electrical documentation following the installation.

Installation guidelines

- It is not recommended to install thin mats at temperatures below –5 °C.
- The subfloor construction must be secure to avoid relative movement after installation.
- Prepare the installation site properly by removing sharp objects, dirt, etc.
- If walking on the elements is necessary during installation and carefully purring of screed, only use soft shoes.
- Be careful not to damage the thin mat with sharp tools, shovel, bucket etc.
- Minimum distance between heating cables; heat-ing cable and conductive parts; heating cable and other heating sources such as hot water pipes and chimneys, must be at least 50 mm.
- Heating cables may not touch or cross themselves or other heating cables.
- Heating cable bending diameter must be at least 6 times cable diameter.
- The thin mats are not to be installed on irregular surfaces.
- The thin mat must be fully embedded in screed (fine concrete).
- Do not lay thin mats under walls and fixed obstacles.
- Do not place objects that will cause a thermal block e. g. furniture, thick carpets, etc. Min. 6 cm air space is required.
- The flooring must not have a thermal insulation value of more than $R < 0.18 \text{ m}^2 \text{ K/W}$ corresponding to 1.8 Tog.

- Keep thin mats clear of insulation material, other heating sources and expansion joints.
- Position the thin mat so that it is at least half the C- C distance from obstacles.
- Thin mats must always be in good contact with the heat distributor (e.g. concrete).
- Always roll out thin mats with the heating cables facing up.
- Ensure not to crease the thin mat.
- If additional securing is required hot melt glue, double adhesive tape or tile glue can be used.
- When the thin mat reaches the area boundary, cut the liner/net and turn the mat before rolling it back. Do not cut the heating cable.
- The thin mat and especially the connection must be protected from stress and strain.
- Free end from cold lead must be protected by installer to avoid water from coming in.

Standard compliance

The thin mats listed below all are for floor heating and comply with the IEC 60335-1: 2010 standard + IEC 60335-2-96: 2009.

- EHeat 100S/150S
- ECcomfort 100T/ 150T
- ECmat 100T/150T/200T

Warranty

A 20-year full service warranty is valid for:

heating mats incl. EHeat, ECcomfort, ECmat.

- Should you, against all expectations, experience a problem with your Danfoss product, you will find that Danfoss offers Danfoss warranty valid from the date of purchase that was no later than 2 years from production date on the following conditions: During the warranty period Danfoss shall offer a new comparable product or repair the product if the product is found to be faulty by reason of defective design, materials or workmanship. The decision to either repair or replace will be solely at the discretion of Danfoss.
- In addition to repair or replacement of the defective product Danfoss will also compensate installation costs and any damage to floor/surface materials (e.g. brickwork, tiles or roof surface) if the damage is caused by the defective product or is an unavoidable result of repairing the defective product for all products with full-service warranty. Except for such costs and damage, Danfoss shall not be liable for any resulting losses or consequential or incidental damages including, but not limited to, damages to property or extra utility expenses. No extension of the warranty period following repairs undertaken is granted.
- The warranty shall be valid only if the WARRANTY CERTIFICATE is completed correctly and in accordance with the instructions, 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 filled in, stamped and signed by the authorized installer performing the installation (Installation date must be indicated). After the installation is performed, store and keep the WARRANTY CERTIFICATE and purchase documents (invoice, receipt or similar) during the whole warranty period.
- The Danfoss 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 Danfoss is required to inspect or repair faults that have arisen as a result of any of the above. The Danfoss warranty shall

not extend to products which have not been paid in full.

- Danfoss will, at all times, provide a rapid and effective response to all complaints and inquiries from our customers.
- All claims exceeding the above conditions are explicitly excluded from the Danfoss warranty.
- For full warranty text please use QR code



WARRANTY CERTIFICATE

The Danfoss warranty is granted to:

The insulation resistance shall be measured by means of a DC voltage of at least 1000 V for one minute.

The measured value shall be no less than 50 MΩ.

Address _____

Stamp _____

Purchase date _____

Serial number of the product _____

Product _____

Art. No. _____

Installation Date _____

& Signature _____

Cable resistance [Ω] _____

Insulation [MΩ] _____

Connection Date _____

& Signature _____

Cable resistance [Ω] _____

Insulation [MΩ] _____

Danfoss A/S

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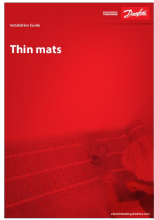
Any information, including, but not limited to information on selection of product, its application or use, product design, weight, dimensions, capacity or any other technical data in product manuals, catalogues descriptions, advertisements, etc. and whether made available in writing, orally, electronically, online or via download, shall be considered informative, and is only binding if and to the

extent that it does not contradict the terms and conditions of the warranty.

It is not permitted to alter Danfoss products without notice. This also applies to products ordered but not delivered provided that such alterations can be made without changes to form, fit or function of the product.

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Documents / Resources



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100S Thin Mats, 100S, Thin Mats, Mats

References

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