Details of installation

Electrician's Name: _____

Electrician's signature: _____

Company Name: _____

& Address: _____

Date: _____

Room with heating installed: _____

Total wattage of system: _____

List the products and test results of each element after installation:

Product type	Resistance	Insulation passed	Room

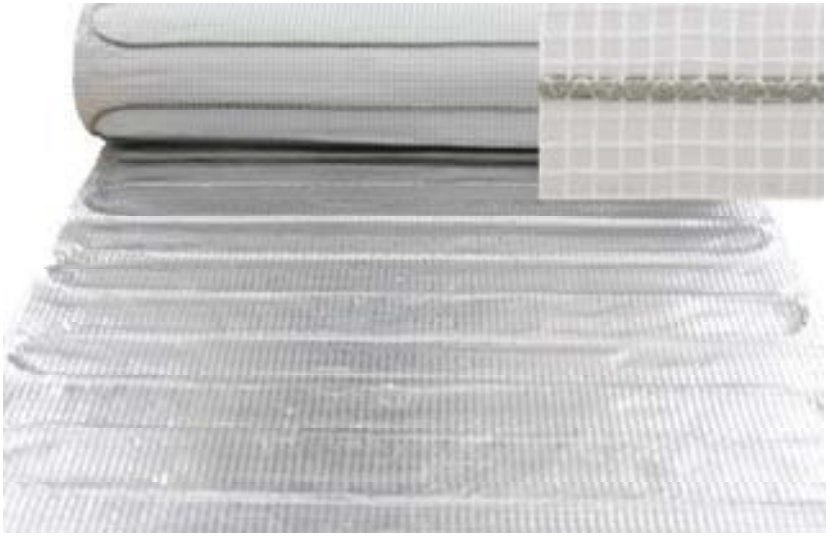
- flexible sheet heating unit is installed in the floor
- do not restrict the thermal emission of the heated floor
- do not affix materials other than those recommended
- do not insert nails or screw

HANDYHEAT®
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DVK-00413-001

HANDYHEAT®
DANSK VARMEKABEL A/S

Instruction Manual
DTFP Aluminum foil heating mat



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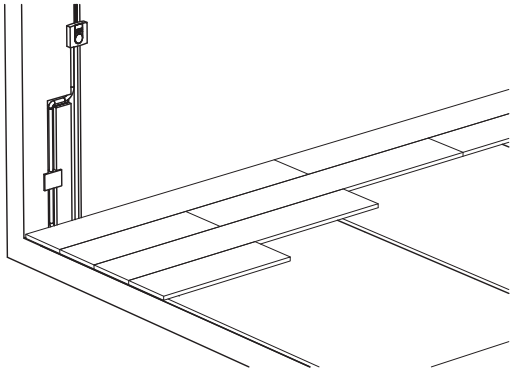
Technical data

Type:	DTFP-60 / DTFP-140
Supply voltage:	230 VAC, 50 Hz
Power output:	60 Watt / m² - 140 Watt / m²
Width:	500 mm
Heating wire:	Twin stranded wire each with double layer insulation
Max. load:	7 Watt/meter
Topside cover:	Earthed Solid aluminum
Max. bending radius of mat:	40 mm
IP rating:	IPx7
Earth shield:	1,0 mm² tinned copper braid
Cold cable:	1 x 5 meter, 3 x 1,0 mm²
Isolation of heating wire:	ETFE/PA
Max. temperature:	80 °C
Approval	
Applied Standards:	EN 60335-1 & EN 60335-2-96

.....Direct floor heating

Order. nr.	Type name	Resistance Ohm	Output Watt	Length m	Width mm
130019	DTFP-60 1m²	958 - 827	60	2	500
130026	DTFP-60 2m²	484 - 418	120	4	500
130033	DTFP-60 3m²	325 - 280	180	6	500
130040	DTFP-60 4m²	243 - 210	240	8	500
130057	DTFP-60 5m²	194 - 167	300	10	500
130064	DTFP-60 6m²	162 - 140	360	12	500
130071	DTFP-60 7m²	139 - 120	420	14	500
130088	DTFP-60 8m²	121 - 105	480	16	500
130101	DTFP-60 10m²	97 - 84	600	20	500
130125	DTFP-60 12m²	80 - 69	720	24	500
993105	PV-underlay , 5 m²			0,8	1250

Order. nr.	Type name	Resistance Ohm	Output Watt	Length m	Width mm
131016	DTFP-140 1m²	415 - 359	140	2	500
131023	DTFP-140 2m²	208 - 180	280	4	500
131030	DTFP-140 3m²	138 - 119	420	6	500
131047	DTFP-140 4m²	104 - 90	560	8	500
131054	DTFP-140 5m²	83 - 72	700	10	500
131061	DTFP-140 6m²	69 - 60	840	12	500
131078	DTFP-140 7m²	59 - 51	980	14	500
131085	DTFP-140 8m²	52 - 45	1120	16	500
131108	DTFP-140 10m²	42 - 36	1400	20	500
131122	DTFP-140 12m²	34 - 30	1680	24	500
993105	PV-underlay , 5 m²			0,8	1250



Step 7
Install the floor sensor in the pipe and check that the top of the sensor is in between two heating wires.

Step 8
Cover the heating mat with a plastic moisture barrier. The joist of the sheeting have to overlap by at least 20 cm. The overlaps have to be sealed over their total length with a tape.

Step 9
When the heating mat is placed properly and the cables are connected to the thermostat, the floor cover can be fitted. Under no circumstances the underlay can be fitted over the heating mat.

During the floor covering do not step directly on the heating mat. Put the protection, fx. the underlay to step on.

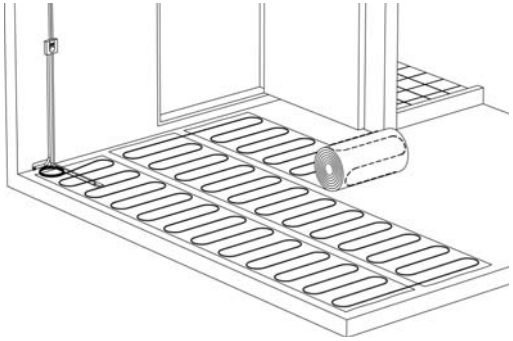
Don't forget that the floor cover should be acclimatized to the room before it is laid out.

Step 10
Once the floor have been laid, perform resistance test on the floor sensor and across the feed cable, to ensure the mat haven´t been damaged during the flooring installation. The desired resistance reading should be within the resistance reading, shown previously.

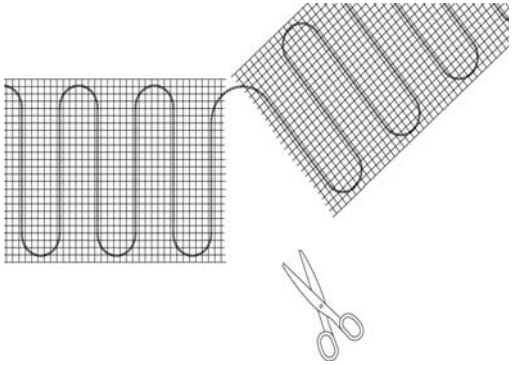
Record the final reading on the Guarantee certificate. Once this test have been completed, final connection of the thermostat can be made. See seperate installation instruction for the thermostat.

Step 11
Place the product label adjacent to distribution board, along with this instruction and Guarantee Certificate and the locations of the heating units.

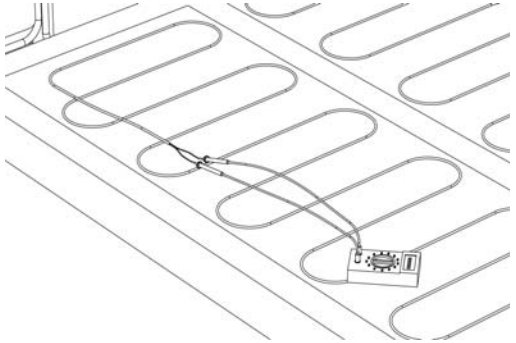
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Step 4
Lay-out your mat in accordance with your drawing. Start in the corner where you have located your Thermostat. Check the black cold lead will reach the location of the thermstat.
You may chose to start at another point or cut a strip of the mesh either side of the cable and run along the edge of the room back to the thermostat.



Step 5
When you reach the wall, cut the mat by cutting the net/mesh Don't cut the cable!
Turn the mat in the direction required. If you are using two or more mats, try to finish off at the opposite wall, so the second mat is easier to lay.



Step 6
Check the cable resistance. Check before and after the mat routing. Note the resistance.
Alternatively you may connect the system to 230 VAC in a few minutes to ensure the cable start up heating. Do not leave the cable connectet more than 4 minutes under no circumstances.
Do NEVER cover the heating mat without testing the mat!

Before installation
Thanks for choosing HandyHeat floor heating system. Before the installation of the system we suggest to read these instructions thoroughly . Check if you have all the necessary materials and tools, at the same time make a scetch how you want to lay-out the heating mat and what way it will be installed.

Tools
The following tools are used for installation: Cutting tool (Stanley), Multimeter

Materials
Heating mat(s) for the size of the room. You may consider 80% coverage of the floor size.
HandyHeat Thermostat with floor sensor, 6mm depron insulation/ underlay, connection box+cover.

This system is ideally suited for installation beneath wood, laminate and floating floor.
NB: In a poor-insulated room 2 x 6 mm underlay / depron insulation can be necessary.

Preparation of electrical-installation
Before starting the installation of the system one should plan the electrical power installationen. In a small room it can be possible to connect the system to the existing electrical power system . But in a larger room it can be necessary to draw the new cables from the electric board.
The system must be protected by a suitablededicated RCD (30mA). A disconnection incorporated in the fixed wiring is to be provided with all-pole disconnection from the supply under overvoltage category III.

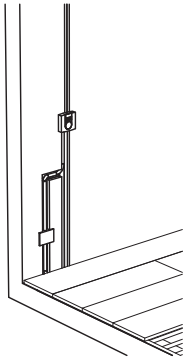
Please note: The system must only be connected by a qualified Electrician and information is filed according to scheme on last page in this instruction.

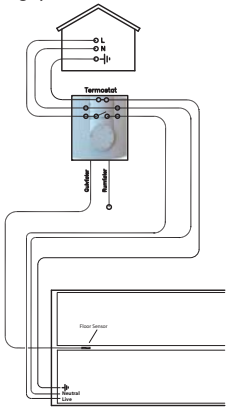
Placing of thermostat
Thermostat is put at about 150 cm height. Thermostats without temperature sensor can be put closer to the foor. When installed in the wet room the thermostat can be put outside the room.

Avoid: Devices producing the radiant heat (fx. furnace)
Walls under direct sunlight
Cold external walls
Walls with hidden pipes or chimney
Behind the curtains

Placing of floor sensor
Floor sensor should be installed in the flexible conduit pipe. Fit the pipe as it is shown on the picture below for about 50 cm from the wall.

Important: - Floor sensor can be put *in the middle* between 2 heating lanes of the mat.
- Make sure the 3 poles N - L - Earth, in the fixed wiring are *disconnected* the power supply, before connecting the heating system





Temperature control
The temperature in the system should be controlled by a thermostat. The thermostat can be loaded with 16A/3600 watt. See the technical data of the thermostat. The contactor is necessary for the higher effect. Contact the electrician for more information.

Make sure the Heating mat is connected to Earth ⏚

See the separate installation instructions for the thermostat.

Do's

- Do thoroughly read this guide before commencing installation
- Do space the heaters evenly across the floor to produce a uniform heat output
- Do ensure that wholeheating wire (including black joins) is covered with the aluminium foil or aluminium tape
- Do ensure that whole heating wire (including black joins) is fitted beneath the floor covering
- Do ensure your floor base has no sharp debris or objects such as nail heads protruding before beginning your installation
- Do install the DTFP heating mat System beneath floating laminate floors and engineered board
- Do ensure there is a gap of at least 2cm between each run of heating mat
- Do use a multi-meter to test each heater before, during and after covering with the final floor covering
- Do connect multiple heaters in parallel and ensure that both earth leads for each heater are connected to the earth ring
- Do plan where to place your heaters before commencing installation and do remember two leads have to be connected to the thermostat for each heater
- Do consider additionally insulating your sub-floor before installing the underfloor heating system
- Do use a HandyHeat thermostat to control your system and limit the floor temperature
- Do ensure that all electrical works conform to the national Building Regulations and current IEE Wiring Regulations
- Do consult with your builder or electrician to ensure your requirements can be met by the system if using the heating system as your primary heat source
- Do place acoustic and other insulation materials beneath the heating system, not on top, and ensure they are suitable for use with electric underfloor heating
- Do ensure the system is protected by a suitable dedicated RCD (30mA)
- Do log on to www.handyheat.net to ensure you are using the most recent instructions

Don'ts

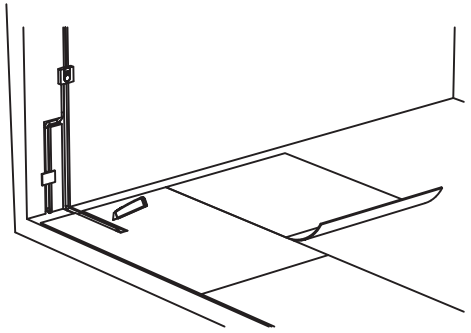
- Don't cut, shorten, strain or cross the heating cables
- Don't bend the joint between the heating cable and the black coldtail
- Don't turn on the system to maximum power once the floor covering is down, you should increase the temperature of the system slowly over a course of weeks
- Don't lay the system so that any cables are closer that 3cm to each other
- Don't place heaters closer than 10cm away from conductive items such as walls, metal pipework or drains
- Don't install the system beneath floor coverings with a thickness greater than 18mm
- Don't install the system directly beneath wooden floor coverings that have to be glued, screwed in place or mechanically fixed into position in any way
- Don't walk unnecessarily on the heating system during installation
- Don't place thermal blocks onto your finished floor covering above your heaters when they are in use. Such items include large bean bags, thick rugs or floor flush furniture
- Don't install the system if the ambient temperature is below 5°C as the cables can become less flexible
- Don't install the heaters in walls or ceilings
- Don't install the heaters where internal walls or partitions will be added later
- Don't insert spikes or screws above the heaters
- Don't install the floor temperature sensor close to other heat sources such as hot water pipes
- Don't lay the final floor covering on top of the heaters without first testing it with a multi-meter (see page 4)

Installation tips

Insulation in the floor affects both the floor heating system and heating costs. We suggest to have a good insulation in the floors, walls and ceiling. If there is a small space that should be warmed up insulation is not that important. But if there is a bigger space and the floor heating system is the main heating source, fx. in winter garden or room opening on to the garden, insulation influences much the heating costs.

The system can be used as a primary or a secondary heating source. When it is used as the secondary heating source the system can be set on the lower temperature than used as the primary heating source. Other heating sources will contribute to lower costs for heating.
HandyHeat 131-F or 132-F thermostats are recommended.

Installation step by step



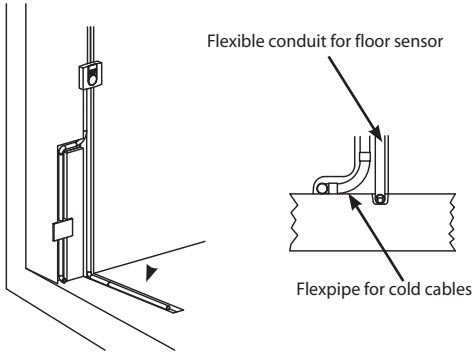
Step 1

When the subfloor is ready and the points from **Important** are maintained the underlay/depron insulation can be laid out. Underlays, at least 5mm, should be laid in bond and cover the whole floor space. When the extra underlay is needed it should be laid across the first one. If needed the underlays can be fastened with the Varmetape.

Put the underlays so that they cover the whole floor but keep distance in 50 mm from the wall, where the cold cables will be laid out. The cold cables can be fixed with the double-sided tape if necessary.

The undelays can be sticked together to lie better if necessary.

NB: During the installlation the footwear with soft soles can only be used.



Step 2

Fix the conduit for the floor sensor. The floor sensor should be placed 50cm from the wall. Due to the conduit, the floor sensor can be changed later. The conduit should be put **in the midldle** between two lanes of the heating mat.

Step 3

Start to unroll the heating mat from the edge as it is shown on the picture. Heating mats must not overlap one other. Unroll the heating mat with the shiny alumimum upside. Don't step directly on the heating mat or the cold cables. Use the extra underlay to step on if necessary!