Drawing of floor:

Dealer :

Installation Manual

DVT-20 / DVT-30 heating cable



Content

6mm twin-core heating cable
Installation step by step
Specification
Guarantee Certificate

HANDYHEAT®
DANSK VARMEKABEL A/S

Before installation

Thank you for choosing *HANDYHEAT* DVT-20 / 30 Floor heating cable. This cable is well suitable for all kind of floor heating systems. You may use this for direct heating or in storage heating.
Before you begin installing please read through these instructions carefully and check you have all the component required.
Required components:

Fixing Strip and High adhesion fixing tape: — for application on top of floors
Fixing straps: — for application on iron mesh in new floors
Thermostat HandyHeat13x with floor sensor , flextube and wall box

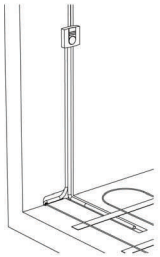
The system is designed for installation below marble, stone or tiles. It may also be installed below parquet, laminate, vinyl or thin carpets, but in these cases must be first covered with a suitable latex-based leveling compound.

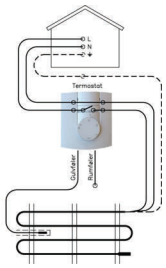
Recommended Watt / m²

(For well insulated rooms)

Watt / m²	Flooring	Room	Heating system
60-80 W/m²	Parquet	Kitchen / living room	Direct heating
80-100 W/m²	Tiles/stone/marble	Kitchen / living room	Direct heating
150-200 W/m²	Tiles/stone/marble	Bathroom/toilet/entrance Conservetries	Direct heating
200—250 W/m²	Tiles/stone/marble	Kitchen / living room / Bathroom/entrance /concervatories	Storage heating

Note: Badly insulated floors or geographic cold areas may need higher W/m². Consult your dealer for more information.





Electrical provision:

Before starting the installation you should make provisions for the electrical connections, for smaller areas this should be possible by means of a fused spur from an existing circuit

Locating Thermostat:

Place Thermostat in a hight of aprox. 150cm. If installing in a bathroom or other wet room, the Thermostat must be located outside of the room on the opposite side of the wall.

Avoid:
Thermostat location on:
Radiant heat from appliances
Sinshine spots
Cold walls
Concealed pipes and chimneys
Do not cover behind curtains

Locating Floor sensor:
The floor sensor must be installed in the flexible tube. Locate the flexible tube in a spur in the floor as shown on picture above. Close the end of the tube to avoid any tile adhesive to fill the tube.

Important:

- The system MUST incorporate a RCD protection. Only an authorised electrician can connect the system.
- The system must be installed according national/local electrical regulations.
- Minimum temperature during installation must be 5°C.
- The orange heater cable must NOT be cut or cross in any point– only the black ”cold” cable may be cut or lengthened.
- The joint between the orange cable and the black cable and all orange cables MUST be located under the final floor coverimg.
- Do not stretch the cable. Protect the cable against any physical damage. Protect the cable with cardboard or carpet during tiling.
- Ensure the cable is spaced not closer than 50 mm.
- Test the cable BEFORE tiling.
- Wait at least 7 days before turning on the system. Always follow instructions for tile adhesive.
- Ensure that the subfloor is solid and suitable for tiling. Wood flooring with more than 30 cm between the joists should ideally be reinforced to prevent flexing and the possibility of tiles dislodging. Wood flooring can be reinforced using 18 mm plywood or gipsonite boards.

Guarantee Certificate

HANDYHEAT gives 10 years Guarantee on heating cables and mats and 2 year on Thermostats.

Without prejudice to any claim the user (customer) may have in relation to the dealer or retailer, the customer shall be granted a manufacturer's Guarantee under the conditions set out below:

1. In the case of new heating cable/mat and their components exhibiting defects resulting from manufacturing and/or material faults within 10 years (heating cables/mats) and 24 months (Thermostats) of purchase, *HANDYHEAT* shall, at its own option and free of charge, either replace the device with another device reflecting the current state of the art, or repair the said device.
2. This Guarantee shall be invalid if the device defect is attributable to improper treatment and/or failure to comply with information contained in the user manuals.
3. This Guarantee shall not apply to or extend to services performed by the authorised dealer or the customer themselves (e.g. installation, configuration, software downloads).
4. The purchase receipt, together with the date of purchase, shall be required as evidence for invoking the Guarantee. Claims under the Guarantee must be submitted within two months of the Guarantee default becoming evident.
5. This Guarantee shall apply to new heating devices purchased in the European Union. The Guarantee is issued by *HANDYHEAT*
6. Any other claims resulting out of or in connection with the device shall be excluded from this Guarantee. Nothing in this Guarantee shall attempt to limit or exclude a Customers Statutory Rights, nor the manufacturer's liability for death or personal injury resulting from its negligence.
7. The duration of the Guarantee shall not be extended by services rendered under the terms of the Guarantee.
8. Insofar as no Guarantee default exists, *HANDYHEAT* reserves the right to charge the customer for replacement or repair.
9. The above provisions does not imply a change in the burden of proof to the detriment of the customer.

To invoke this Guarantee, please contact the *HANDYHEAT* telephone service or your authorized *HANDYHEAT* dealer. The relevant number is to be found in the accompanying user guide.

HANDYHEAT is a Brand manufactured by: Dansk Varmekabel, Denmark

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Place product label here

Temperature control

HandyHeat thermostats are suited for the system. Due to HandyHeat thermostats the best possible heating comfort and economy is obtained.

Digital Thermostat



HandyHeat-131-F-AF

Programable digital Thermostat



HandyHeat-132-F-AF

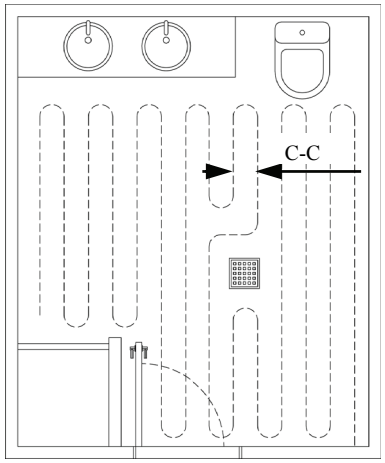
HandyHeat thermostats have a rating of 16 amps— loads in excess of 16 amps / 3600 Watt should be connected via a suitable switched contactor. Consult with your electrician about that.
Please see seperate instruction for connection and operation of the digital thermostat.

Technical Data:

Type:	DVT-20 / 30 Twin conductor fully shielded heating Cable.
Supply voltage:	230 VAC , 50Hz
Power:	20W/ metre or 30 W/ metre
Diameter:	6 mm
Heating element insulation:	Teflon / PVC
Shielding:	Braided tinnet cupper wires, 1,5 mm²
Outer jacket:	PVC/ 90°C
Cold cable	2,5 metre 2 x 1,5 mm² + shielding wires 1,5 mm²
Dimensions of cold cables:	6,5 mm x 4,5 mm
Available cable lengths:	12—20—25—30—40—50—60—70—80—100—120—150—150 metres
Power:	240—400—500—600—800—1000—1200—1400—1600—2000—2400 3000 Watt
Cold cable:	2,5 meter
Approvals:	**CE**
Standards:	**VDE 0253**

Installation Step-by-Step

Step 1



Make a sketch of your floor with the lay-out of your floor heating.

Determine the number of Watt /m² that you need. With the cable you also have full flexibility to increase or decrease the Watt /m² in partial floor areas.

A. **Length of cable** = (Watt per m² x areal of floor m²) / 20
Example: (150 watt / m² x 5,2 m²) /20 = 39 metres
Standard length of 40 metre is choosen (800Watt)

B. **Floor area** = Netto floor area (m²) / cable length in metre

Example: Total floor area: 5,5 m² Netto floor area: 5,2 m²
Wanted :150 Watt /m² Total 5,2 x 150 Watt /m² = 780 Watt
Length of cable to be used: 780 watt / 20 = 39 metre

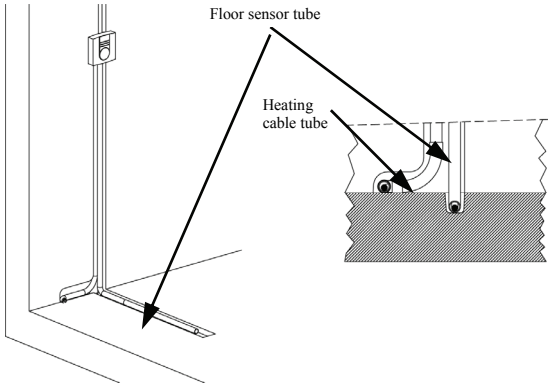
C. **Spacing** in cm (C-C) = (Number of m² x 100) / Length of cable

Example: Floor area 5,2 m² and cable length = 50 metre
(5,2 x 100) / 40 = 13 cm

Important: Remember to subtract areas for drains, toilets etc!

Plan the location of the thermostat and start the lay-out from the thermostat. The sketch will help you to install the floor heating correctly as well as to remember the lay-out details. This may be a great advantage for future changes.

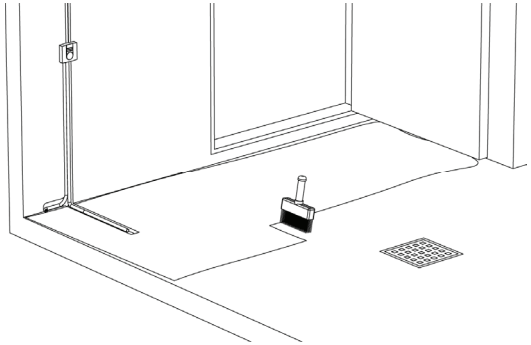
Step 2



Position thr floor sensor tube in centre between two runs of heating cable. Using the tube makes a later replacement of sensor easier.

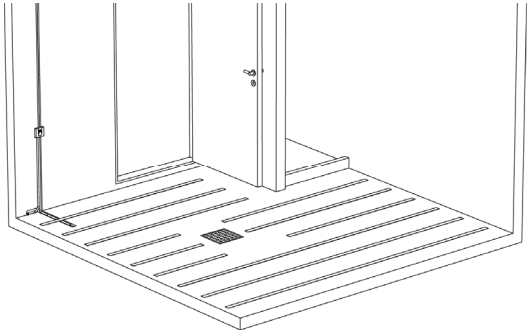
Remember to close the end of the tube.

Step 3



Clean the floor. Make sure the floor is free from dust, grease and debris.
Suitable subfloors are: concrete, existing tiles, waterresistant timber, water resistant gypsonite, floor boards.
National building regulations must be respected.

Prime the floor using a suitable primer. If installing over larger areas or an absorbant surface the primer may need to be deluted with water to a maximum of two parts primer to one part primer. **Leave the primer to dry.** Typically **1– 3 hours.**



Step 4

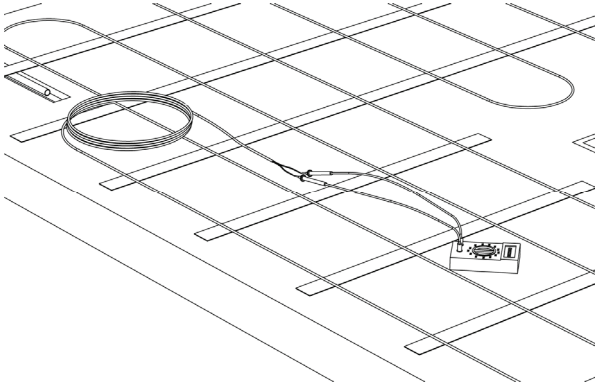
Using the Fixing Strip and high adhesion tape:
Locating heating cable on existing floors

Locate the fixing tape. Before placing the tape, it is advisable to mark the C-C intervals on the floor.
Now route the fixing tape as shown to the left and place the fixing strip on the top of the tape. Be carefull not to step on tape during placement of Fixing strip.
Route the cable with the calculated spacing.

Using fixing straps on iron mesh
Locating heating cables in **new** concrete floors.

Before fixing the cable to the iron mesh make sure no other works remains before covering with concrete screed. Space the cable with the calculated spacing

Minimum distance is 50 mm. If your calculation gives less distance your cable is too long.

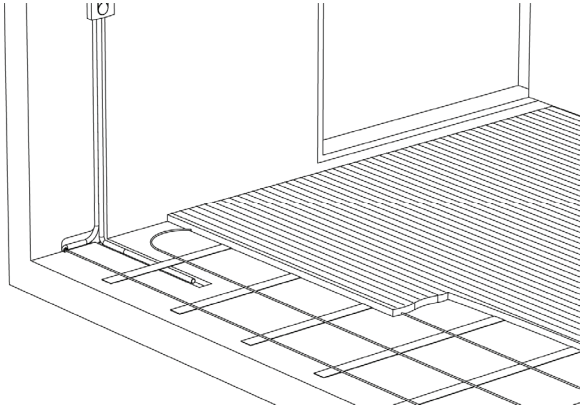


Step 5

Check the cable resistance before and after the cable routing. Note the resistance.

Alternatively you may connect the system to 230 VAC for a few minutes to ensure the cable start up heating. Do not leave the cable connected more than 4 minutes under no circumstances.

Do NOT cover the cable without testing it!

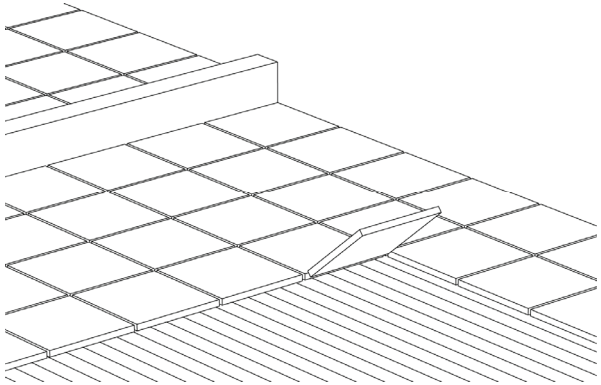


Step 6

Only for installation on existing floors:

Cover the cable with a leveling screed. This will protect the cable when tiling. There are many suitable products. Always follow the instruction on the bag.
If you do not wish to use the leveling screed, you may tile directly over the cables in a single operation. However extra care must be taken not to damage the cable or dislodge the cables.
If you are using a suitable vinyl or thin carpet, we recommend a minimum 6 mm screed over the cables to ensure even heat distribution.

For wet rooms special considerations must be taken.



Step 7

Tile the floor using a flexible tile adhesive.

Carefully follow the instructions given by the manufacturer of the tile adhesive.

Finally wait at least one week before turning the heating system on, to allow the tile adhesive to harden and dry.
Forced heating to dry the tile adhesive will weaken the adhesive and may damage the heating cable. Optimal drying time for the most common tile adhesives is aproximately 28 days

NOTE. The heating may be slow to react first, especially if installed on new screed floor or in a new building.
Start by setting the temperature at 20-22 °C and build up the temperature by 1 degree per day until the desired temperature is reached.

Installation Notes

The system requires a main voltage of 230 VAC and must be connected by an authorised electrician. All wiring must conform to national regulations.

The system is intended for heating tiled or stone floors and the optimum recommended output is aprox. 150 Watt per sqm achieved by spacing the cable at around 10 cm between the loops.

The insulation level of a floor will influence both the performance and running cost of an underfloor heating system. Good insulation level in floor, walls and roof is strongly recomended. It would not generally be considered nessery to insulate small areas where the reguirement is simply to ”take the chill of the floor”. However in cases where the heating is being installed over large areas, particulary as the primary heating source in a ground floor room or conservatory, insulation boards will greatly reduce warm-up time and running cost.

The system is suitable both as primary or secondary heating source as well as storage heating. HandyHeat thermostats 13x are suited with both a floor sensor and a room temperature sensor. Any adding heating sources wil reduce the running cost of the floor heating system.
HandyHeat 132-F is well suited for storage heating since this is a combined timer and thermostat and only controls the floor temperature.
You are welcome to contact our office for more information concerning storage heating.