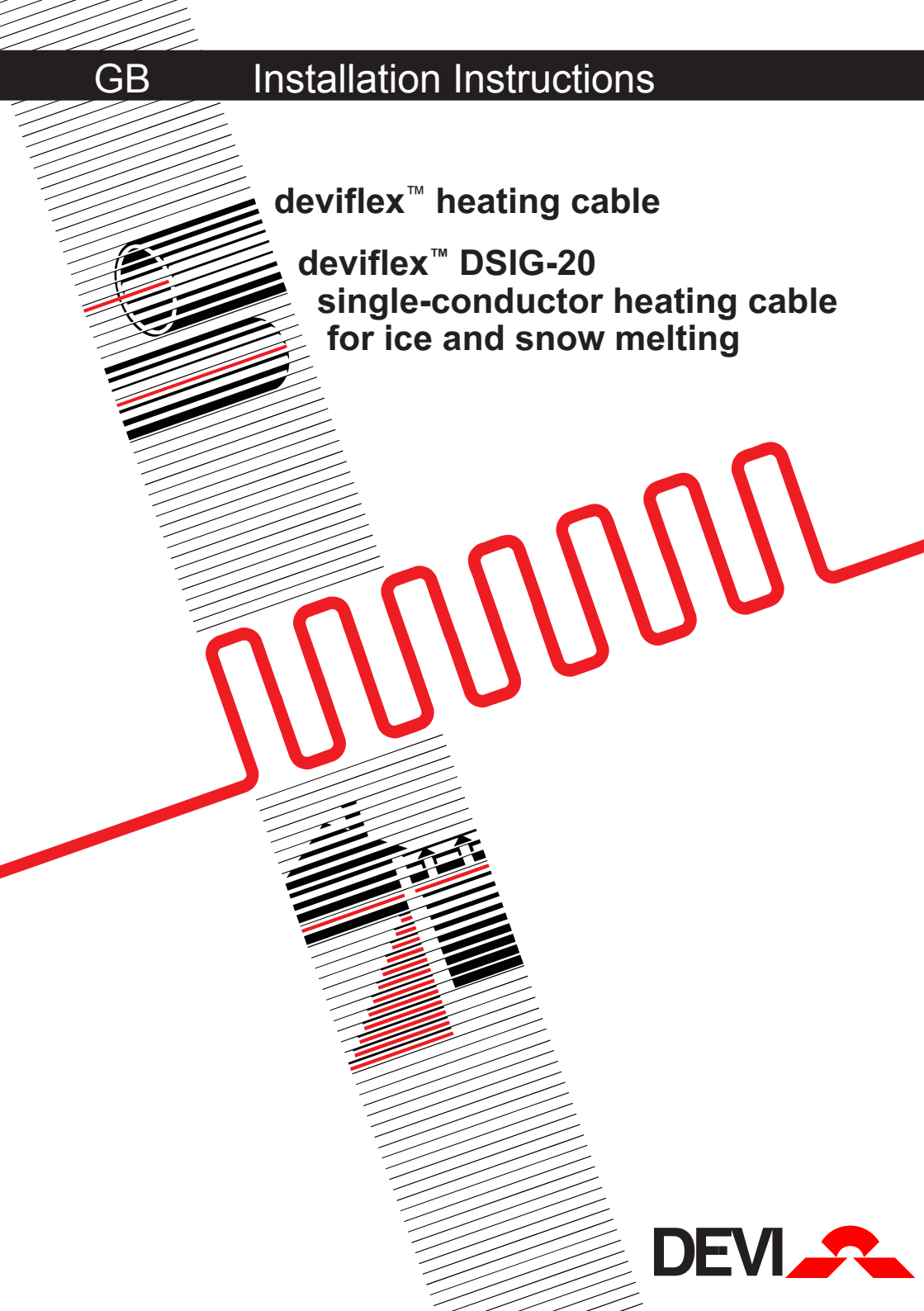
GB Installation Instructions

deviflex™ heating cable

deviflex™ DSIG-20
single-conductor heating cable for ice and snow melting



DEVI

Notes

deviflex™ DSIG 20 heating cable

deviflex™ DSIG-20 heating cable is used for both ice and snow melting of outdoor areas and other applications with embedding in concrete etc.

These instructions cover ice and snow melting of outdoor areas.
Should you require further information about other areas of use please consult our Ž heating cable compendiums.

Cable specifications

Cable	**deviflex**™ DSIG-20
Type	Single-conductor with screen
Voltage	400 V AC
Effect	20 W/m
Diameter	Ø 5,5 mm
Cold tail	2 x 2,5 m, 1,5 mm² + screen
Conductor insulation	XLPE (Polyethylene)
Sheath	PVC 90ºC
Max. temperature	65ºC
Tensile strength	Max. 25 kg

Connections

Live - Black
Neutral - Black
Earth - Screen

Areas of use

The table beside shows a variety of areas where the heating cable is used and the required effects in connection with ice and snow melting.

Area of use	Effect
Car park	
Drive ways	175 - 200
Pavements	175 - 250
Outdoor steps (insulated)	175 - 250
Loading platforms (insulated)	200 - 250
Bridges (insulated)	200 - 250
Outdoor steps (not insulated)	200 - 250
Loading platforms (not insul.)	250 - 300
Bridges (not insulated)	250 - 300
Roofs	250 - 350
Gutters	

The system must be disengaged at temperatures of more than + 10ºC.

Warning !

- **The cable must not be shortened or cut in any manner or subjected to strain at the cable-coupling.**
- **Connecting the cable to the mains should be undertaken by an authorised electrician.**

General installation

When installing heating cables the following should be observed:

1. **The heating cable must only be used in the manners recommended by DEVI and should be properly connected to the main electrical source.**
2. Connection of the heating cable must be done by an authorised electrician.
3. The maximum effect for the different installations and operating effects must be observed.
4. **The heating cable must be protected against excess strain and tension.**
5. The area below the heating cable must be clean and free for sharp objects.
6. The heating cables bending diameter must not be less than 6 x the cables own diameter.
7. The heating cable must not lie in lines touching each other and must not cross itself.
8. **The heating cables screen must be earthed in accordance with the local electricity laws.**

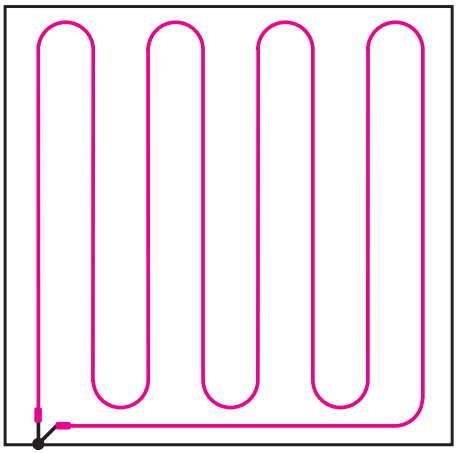


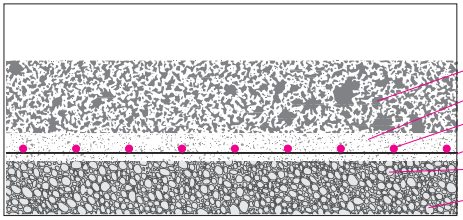
Fig. 1
Installation with one single-conductor cable.

9. The heating cable must not be cut/shortened or exposed to strain in the areas of the cold cable/heating cable coupling (tensile strength maximum 25 kg).
10. The heating cable must be laid with even spacing over the whole area.
11. To ensure an accurate and easy method of laying the heating cable we recommend the use of **devifast** fitting band which can secure the cable at distances of 2,5 cm apart.
12. Since DSIG-20 is a single-conductor cable, which means that both ends has to be connected to the thermostat, this has to be taken into consideration, when laying out the cable (see fig. 1).
13. The sensor cable must be protected by a length of conduit (Ø min. 10 mm). The conduit, is sealed at the end so that concrete cannot seep in, and placed between the cable at the open end of a cable loop.
14. Special care should be taken not to damage the heating cables with tools etc. during the casting of asphalt/concrete.
15. Before laying the asphalt a layer of sand or grit should be spread so that it covers the top of the cables and protects them from the heat of the asphalt. Allow the asphalt to cool to a temperature of 130ºC-140ºC before laying it over the cables. The cables can stand this temperature for a limited period.
16. The asphalt/concrete must not contain sharp stones.
17. Should the cable become damaged while laying it out or later on in the building process, it is a great advantage when trying to locate the fault to know where the connection box between cable and cold tail and the

end of the cable are situated. It is therefore important to make a sketch showing where these things are in the room.

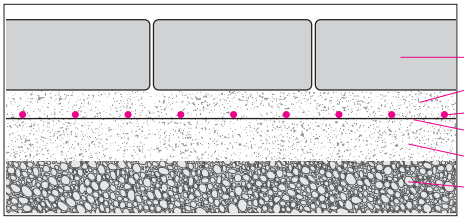
18. When the heating cable is laid, special care must be taken that it is not pushed down into the insulating material. Also that the cable and the cold cable/cable coupling are completely enveloped by the concrete around it and without air pockets as both these points can result in a defect cable.
    Therefore please be careful when laying the cable!
19. The heating cables Ohm value and insulation should be measured after the cable has been laid and after the concrete has been cast. The cables Ohm value must be the same as shown on the cold cable/ heating cable coupling: -5 - +10%.
20. It must be possible to turn the heating cable off. We recommend a **devireg**™ thermostat (see page 6).
21. Allow the concrete/asphalt to dry (for concrete approx. 30 days) be-fore switching on the heating cables.
22. If strips are used to attach the cable, it is important that the strips are not tightened thus the cable is deformed. Make sure that the cable can be easily moved.
23. At low temperatures the heating cable can become stiff and difficult to work with. This problem is solved by connecting the cable to the mains for a brief period of time. The cable must be rolled out when this is done!
    It is not recommended to lay the cable at temperatures below -5ºC.

Installation under asphalt, tiles and concrete



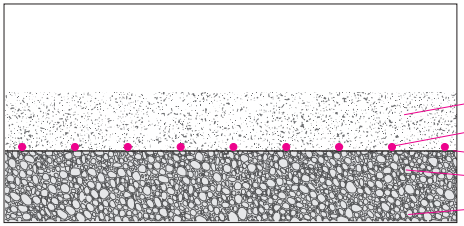
Asphalt

Asphalt, one of several layers, min. 5 cm.
Sand.
deviflex™ heating cable.
devifast fitting band.
Lower support layer of crushed stone, 3-4 cm.
Ground.



Tiles

Concrete tiles of 6-8 cm.
2-3 cm layer of sand.
deviflex™ heating cable.
devifast fitting band.
Layer of sand, 5 -7 cm.
Ground.



Concrete

Concrete layer with minimum width of 5 cm.
deviflex™ heating cable
devifast fitting band
3-4 cm layer of sand/grit.
Ground

Calculating the C-C distance

The C-C distance is the distance between the centre of one cable loop to the centre of the next.
Calculating the C-C distance can be done in two ways, either by using the cables length or by using the required effect.

$$\text{C-C} = \frac{\text{Amount of m}^2\text{ free area x 100}}{\text{Cable length}}$$

or

$$\text{C-C} = \frac{\text{Effect pr. meter cable x 100}}{\text{Effect pr. m}^2\text{ free area}}$$

result in cm.

Controlling and regulating

The optimal control for **deviflex**™, be it comfort or economy, is reached by using an electronic **devireg**™ thermostat which reacts quickly and effectively.

There are a wide variety of **devireg**™ thermostats which cover both the demands and wishes for each individual installation.

devireg™ 810 is capable of detecting ice and snow.

The sensor cable can be extended with up to 50 m with 0,75 mm² (and up to 200 m with 1,50 mm² cable for **devireg**™ 810 ground sensors).

Thermostats

Series	Mounting	Temp. range	Sensor A	Sensor B	Night set back	Colour
330	DIN-rail	-10º - +10ºC	Wire			Grey
316	DIN-rail	-10º - +50ºC	Wire		0º - 8ºC	Grey
610	Outside splash proof	-10º - +50ºC	Wire			Polar white
810	DIN-rail	-15º - +6ºC	Ground Moisture	Outdoor Temp.		Grey

For choice of thermostats - see our product catalogue.

Sensors and accessories

- Wire sensor 2,5 - 6,0 and 10,0 m
- Outdoor sensor
- Moisture sensor for ground and roof instalment
- **devireg**™ remote control
- **devitime** 301 electronic timer
- **devifast** fitting bands, 5 m and 25 m
- **deviguard** 103 audio alarm system

The DEVI Warranty:

You have purchased a **deviheat**™ system, which we are certain will increase your home comfort and economy.

deviheat™ provides complete heating solutions with **deviflex**™ heating cables or **devimat**™ heating mats, **devireg**™ thermostats and **devifast** fitting bands.

If, however, contrary to all expectations, a problem should occur with your heating system, we at **DEVI,** with manufacturing units in Denmark, are, as European Union suppliers, subject to general product liability rules, as stated in Directive 85/374/CEE, and all relevant national laws which implies that:

DEVI provides a warranty for **deviflex**™ heating cables and **devimat**™ heating mats for a 10 year period and all other **DEVI** products for a 2 year period against defects in material and production.

The guarantee is granted on the conditions that the WARRANTY CERTIFICATE on the overleaf is filled out properly in accordance to instructions and that the defect is inspected by, or presented to, **DEVI** or authorised **DEVI** distributor.

Please note, that the wording of the WARRANTY CERTIFICATE must be provided in english or local language with the ISO code for your country in the upper left corner of the front page of the installation instruction in order to release the warranty.
The obligation of **DEVI** will be to repair or supply a new unit, free of charge to the customer, whitout secondary charges linked to repairing the unit.
In case of defective **devireg**™ thermostats, **DEVI** reserves the right to repair the unit free of charge and without unreasonable delay to the customer.

The DEVI warranty does not cover installations made by unauthorised electricians, or faults caused by incorrect designs supplied by others, misuse, damage caused by others, or incorrect installation or any subsequent damage, that may occur. If **DEVI** is required to inspect or repair any defects caused by any of the above, then all work will be fully chargeable.
The DEVI warranty is void, if payment of the equipment is in default.

At all times, we at **DEVI** will respond honestly, efficiently and promtly to all queries and resonable requests from our customers.

The above mentioned warranty concerns product liability whereas matters in relation to legislation on sale of goods shall be referred to national law.

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Warranty Certificate

The DEVI Warranty is granted to:

Name: Phone:

Address: Postal code:

Please Observe!

In order to obtain the **DEVI Warranty,** the following must be carefully filled in. See other conditions on the overleaf.

Cable layout contractor: Lay-out date:

Electrical Installation by: Installation date:

Cable length: Watt:

Stock code: Cable code: Connection box code:

Application:

- ❑ Concrete
- ❑ Wooden floor
- ❑ Pipes
- ❑ Roof and roofgutters
- ❑ Ground
- ❑

Suppliers Stamp:

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