



Veria Snowmat 300

Installation guide



VERIA 

Fig.1

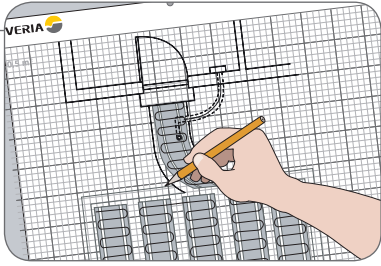


Fig. 2

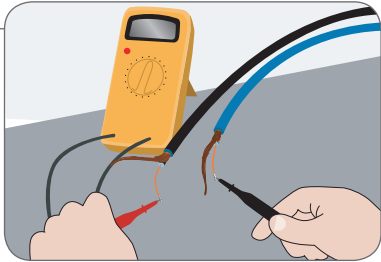


Fig. 3

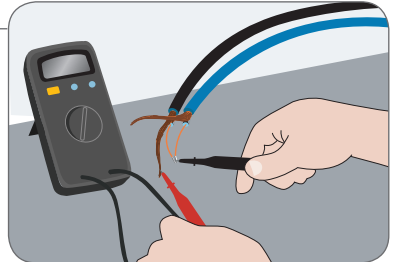


Fig. 4

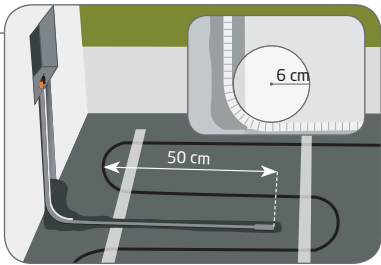


Fig. 5



Fig. 6

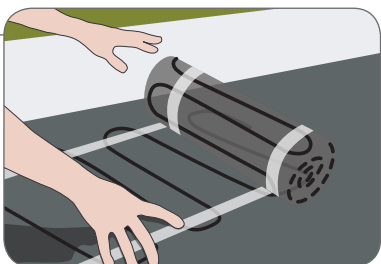


Fig. 7

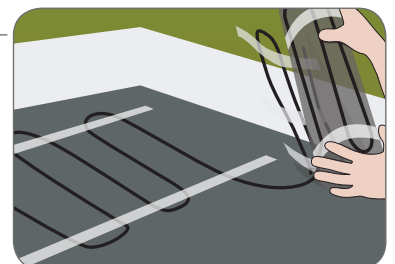


Fig.8

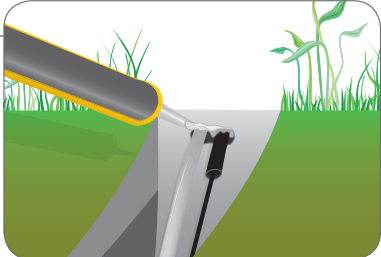


Fig. 9



Product specifications - Veria Snowmat 300

Veria Snowmat 300 is a 2-conductor heating mat used for places where ice and snow melting on the ground or free construction area is required.


When heating mats/cables are installed to melt the snow or slippery ice on the ground area, safety and cost savings are important. This system can be used near houses at pavements, driveways and walkways or in commercial car parks, ramps, steps and areas of drainage.

Veria Snowmat 300 is an extremely high-quality, 300 W/m², 360° fully screened heating mat with a tough outer sheath (UV stable). Its round profile and robust construction ensures a fast, simple and safe installation on the ground. The cold lead has solid conductors ensuring fast installation with a clearly visible connection.

Caution!

It is important that this equipment is installed only by qualified electricians who are familiar with the proper output, sizing, installation, construction and operation of outdoor warming systems and the hazards involved. The heating mat is designed for outdoor heating purposes only.

Note that the heating cable must be connected to the power supply by an authorized electrician.

Voltage:	230 V~	Cable type:	2-conductor	
Output:	300 W/m ²	Screen:	100% coverage; alu-foil	
W x L:	See label	Insulation core:	PVC, black	
Mat thickness:	7 mm	Min. bending Ø:	42 mm	
Cable layout width:	45 cm	Max. temp. unpowered:	90 °C	
Heated area width:	50 cm	Connection cable:	5 m	
Cable C-C distance:	10 cm			

Mat dimensions, W x L	Heated area	Output @ 230V~	Resistance	Connection cable
0,5 x 3,4 m	1,7 m ²	500 W	105,5 Ω	2x1,5 mm ²
0,5 x 9,2 m	4,6 m ²	1365 W	38,7 Ω	2x1,5 mm ²
0,5 x 12,6 m	6,3 m ²	1920 W	27,9 Ω	2x1,5 mm ²
0,5 x 18,2 m	9,1 m ²	2755 W	19,2 Ω	2x1,5 mm ²
0,5 x 23 m	11,5 m ²	3460 W	15,3 Ω	2x2,5 mm ²



The heating mat must be embedded.

Connection:

Phase	Black
Neutral	Blue
Ground	Copper



Note that the heating cable must not be cut under any circumstances.

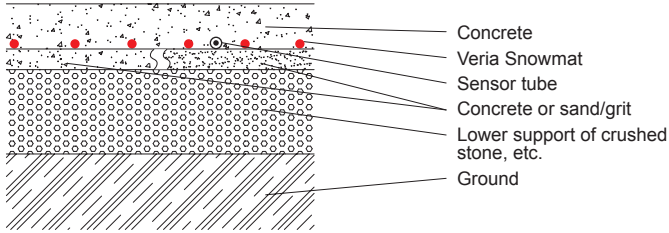
The heating mat/cable must be never put in two layers, overlapped or crossed over.

Installation types

By following the installation types below you are guaranteed good performance and many years of trouble-free use.

1 Heating mat embedded in concrete

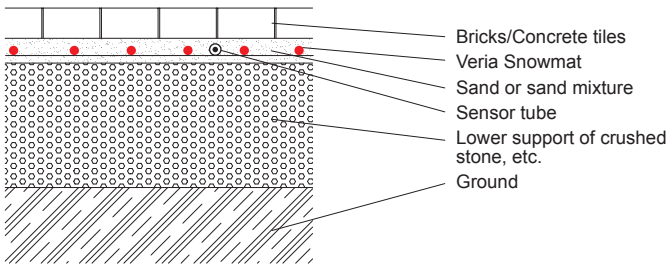
Heating mat placed on concrete or sand/grit basemant.



- It is recommended to place the cable min 5 cm from the surface if installed in concrete. Concrete thickness has to be chosen according the local norms and regulations.
- Make sure that the mat/cable is fastened to the basemant, as the concrete might move the cable when it is poured.
- The concrete mixture must not contain sharp stones as they may damage the cable.
- The concrete should be allowed to set for 30 days before the heating cables are turned on.

2 Heating mat with bricks/concrete tiles surface

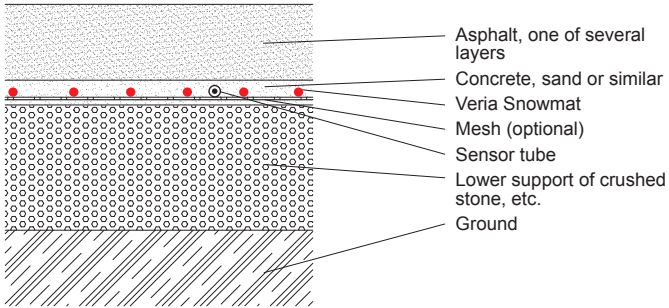
Heating mat placed into sand or sand mixture.



- Special care must be taken not to damage the heating cable when they are installed under bricks/tiles.
- The area must be completely level and free of stones or other sharp objects.
- The heating cable must be installed close to the bricks/tiles, typically in a layer of sand (at least 2,5 cm under the brick/tile).

3 Heating mat with asphalt surface

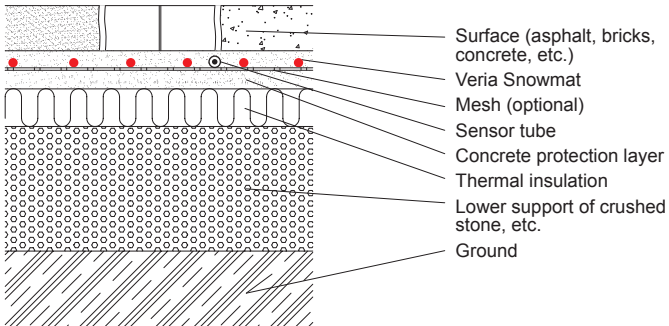
Heating mat placed into protection layer.



- The cables must be covered with the sand or concrete (at least 2,5 cm) before the asphalt is applied to protect them from the heat of the asphalt.
- Allow the asphalt to cool to a temperature of 130...140 °C.
- It is strictly prohibited to apply asphalt directly onto Veria Snowmat.
- The asphalt should have a minimum thickness of 5 cm or according to the local norms and regulations.

4 Heating mat with thermal insulation layer

Heating mat placed on a thermal insulation into concrete protection layer.



- It is strictly prohibited to install heating cable/mat directly onto thermal insulating material.
- When the thermal insulation layer is provided, the concrete protection layer should be installed.
- When the heating cable is laid, special care must be taken, so that it is not pushed down into the thermal insulating material.

Installation guide

Congratulations on your new Veria product!

By following the installation guidelines below you are guaranteed high-performance and many years of trouble-free use.

1 Caution!

Read the instructions carefully before installing Veria Snowmat.

- The system must be installed with a temperature controller/limiter.
- The mat or cable must be embedded in mortar or mortar mixture, concrete, sand or similar;
- The benefit of insulation is obviously significant for free constructions. Insulation of the free sides of the construction must also be considered.
- The minimum installation temperature is $-5\text{ }^{\circ}\text{C}$;
- Do not cut the black heating cable;
- Do not install the heating mat in such a way that two black heating cables touch, cross over or overlap;
- Remember to always measure, verify and record the actual heating cable/mat and insulation resistance through out the installation process (out of the box, after installation, before the concrete or sand application and after installation of the surface);
- Veria Snowmat is intended only for outdoor installation.

Please consult the manufacturer on any other issues or when you need an advice on Veria Snowmat.

2 Let's get started

- A. Necessary tools: hammer, chisel, pencil, tape measure, craft knife, multimeter, insulation tester and this guidance leaflet and a plan.
- B. Plan: Draw your ground or free construction area to be heated on the graph paper (fig. 1). Remember to draw any fixed elements/barriers and the location of your thermostat/power supply and sensor. Your heating mat(s) should have a smaller m^2 measurement than the available heated area. Draw in your Veria Snowmat(s) with a gap of 5-7 cm between the mat lines on the plan (cable layout width: 45 cm).
- C. Transfer your plan with markings onto the installation area, so that you know exactly where you will start and finish.

3 Test your Veria Snowmat

Before you lay the heating mat you must check whether the heating conductors works properly.

The resistance value is measured by a multimeter between the blue and black connection wires (fig. 2). Check whether the value measured matches the value of the label attached to the cold lead connection. The value displayed must lie within $-5\%\dots+10\%$ of the given ohm value. Make a note of the value measured on the proof of warranty.

Then measure the insulation value by an insulation tester, measuring should be performed between the screen (outer connector wiring) and both black and blue connection wires (fig. 3). The measured value must be over 20 MOhm. Make a note of the value measured on the proof of warranty.

4 Preparation and cleaning

Power supply and sensor

Start by cutting/drilling a groove in the wall and ground from the connection point if any. A separate tube for the thermostat's sensor and the heating mat's power cables should be fitted into this groove (fig. 4).

Make sure that the sensor tube stretches at least 50 cm out into the heated area and the sensor is placed between two heating cables. The curve of the tubes must have a radius of no less than 6 cm.

Before you fit the cable mat, you need to prepare the installation area (fig. 5). Check the ground or free construction area to be heated and remove sharp edges, leaves and dirt. Check and prepare the switch board and connection point.

5 Installing the heating mat

Start rolling it out referring to your layout plan. Place the start of the mat close to the connection to electricity installation.

Note that the connection/muff between the heating cable and the power cable must be embedded.

Unroll the mat up to the point at which it is to be flipped (fig. 6). When you meet an obstacle, cut the tape using the craft knife/scissors and rotate the mat, so that it can be unrolled to cover the area next to the part of the mat that has already been unrolled (fig. 7). Do not cut the cable!

The cable can be loosened from the tape, and can be placed as a usual cable with centre-centre distance 10 cm. This feature can be very useful around drains or other objects. Make sure that the cable is fastened at intervals of min 50 cm, as the concrete or similar material might move the cable, when it is poured. The heating cables bending diameter must not be less than 6 x the cables own diameter - 42 mm.

Veria Snowmat(s) must be laid with even spacing over the whole area. Distance between 2 nearest heating mats must be minimum 5 cm. Distance between a mat and a heating cable which is loosened from the tape must be equal to the distance of heating cables fixed on mat (10 cm for Veria Snowmat 300).

After installation, the mat has to be fastened to the basement (by nails/dowels through the tape, by concrete spots, etc.), as the concrete or so on might move the heating mat when it is poured.

If reinforcement mesh is used, begin by fastening the heating cable/mat to the mesh using strips or fixing wire. If strips are used to attach the cable, it is important that the strips are not tightened as this might cause deformation of the cable.

Fix conduit for sensor cable, sensor tube, etc., if any. A conduit of min. Ø inside 13 mm should be laid to the sensor casing. **The pipe for wire temperature sensor must be sealed at the end to prevent concrete penetration.** Find additional information in the installation instruction of control unit/thermostat.

Special care should be taken not to damage the heating cables, connection cables, sensor tube, etc. with tools etc. during installation.

At low temperatures the heating cable/mat can become stiff and difficult to work with. This problem is solved by connecting the cable/mat to the mains for a short time (few minutes). The cable or mat must be rolled out during this process!

In places where the heating cables are going to cross expansion joints, the cables must be protected from mechanical strain related to the movements in the construction.

If needed, extend cold tail and sensor cable with shrink tubes and place connections dry. Seal all penetrations through the walls or other structures (fig. 8).

6 Midway test

After laying out the mat please measure the resistance and insulation values in the mat again (fig. 2-3). Use the same procedure as in section 3, then make a note of the values on the proof of warranty.

7 Filling and final measurement

Plan: Draw/correct real placement of heating mat, sensor conduit tube, muffs, connection box, etc. and put all real distance/sizes for heating system's elements.

When the heating cable is laid, special care must be taken that it is not pushed down into the insulating material.

Feed the power cable to the connection point. Then cover the heating mat with a thin layer mortar or mortar mixture, concrete, sand or similar materials (fig. 9). The concrete, sand or similar materials must not contain sharp stones. Special care must be taken to make sure that the cable and the cold cable/cable coupling are completely enveloped by the concrete, sand or similar materials and are free of air pockets. Failure to do this can result in a defect cable.

After fitting, measure resistance and insulation values of the mat again (fig. 2-3). Use the same procedure as in section 3 - then make a note on the values on the proof of warranty.

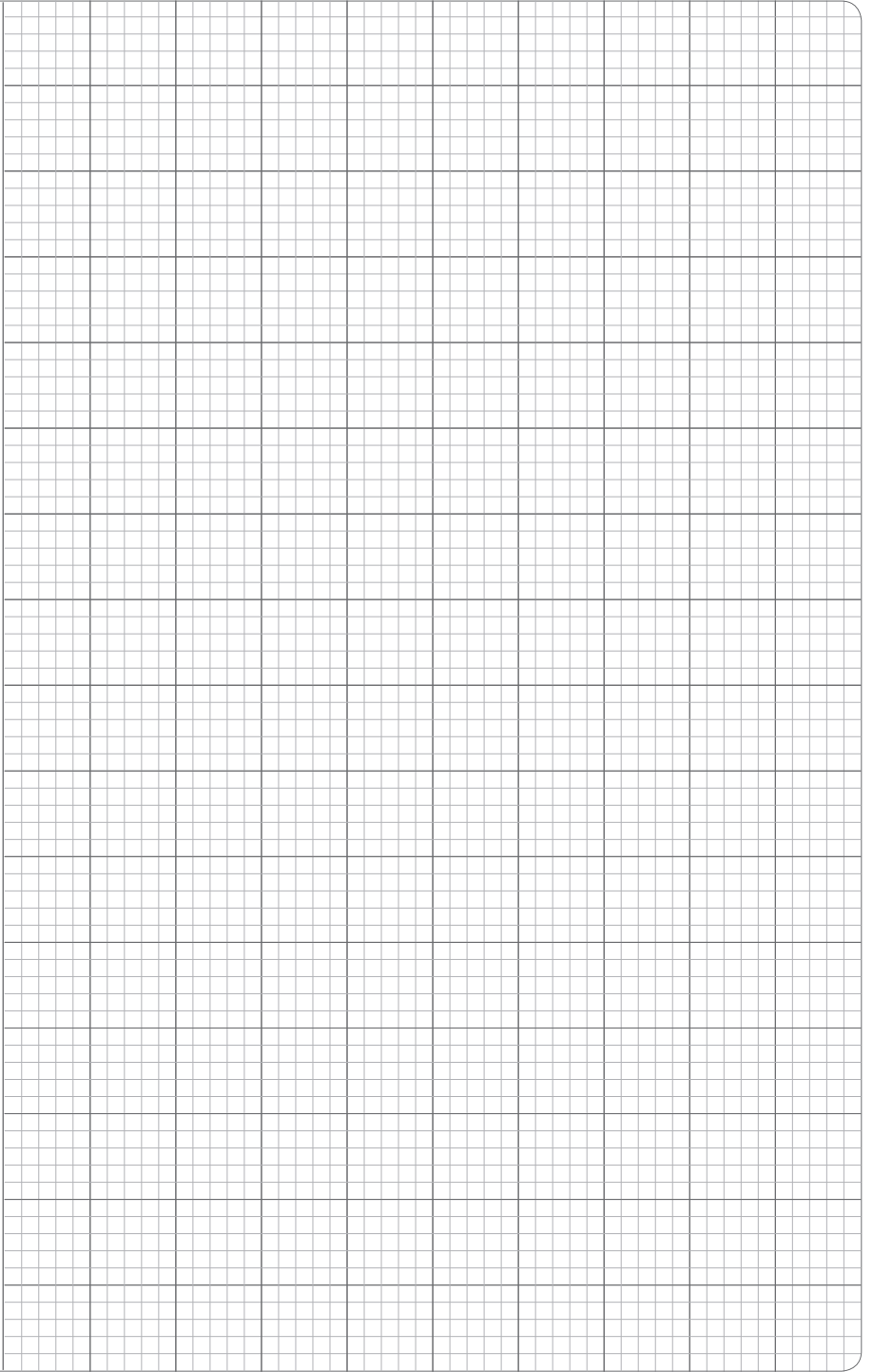
8 Finishing

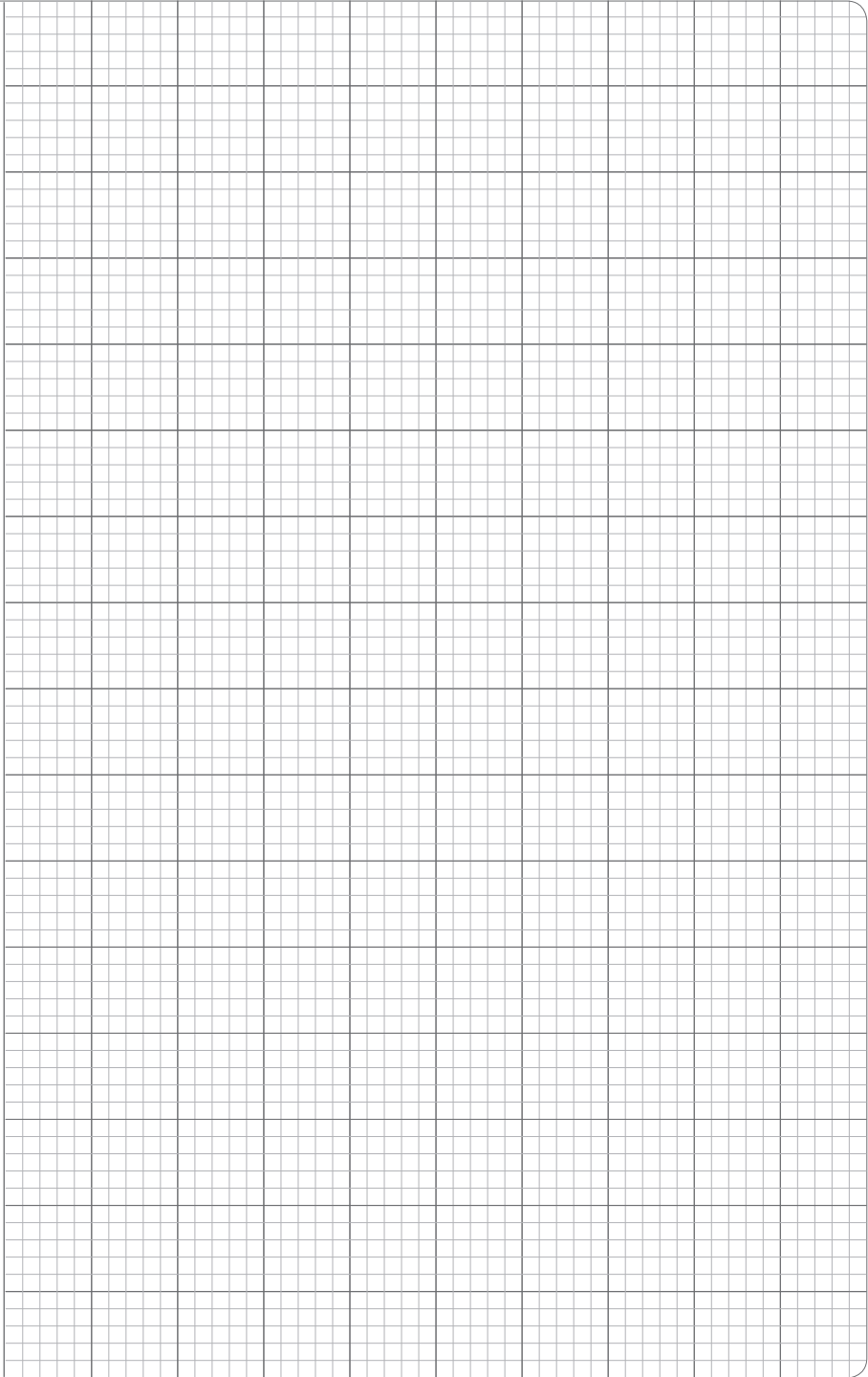
Should the cable become damaged while laying it out or later on in the construction process, it is a great advantage when trying to locate the fault to know the place of connection between the cable and cold tail and the end of the cable. It is therefore important to make a sketch or take photos showing where the mat lines, connection and end cap are located.

Install thermostat/regulator and connect cables to the connection boxes and switch board. **Please note that heating cable/mat must be supplied through a residual current device (RCD) having a rated residual operating current that complies with the local norms and regulations.**

After the work has been completed the concrete should be allowed to set for 30 days before the heating cable/mat are turned on. For other materials you should refer to the manufacturer's guidelines.

To connect the thermostat/regulator, please refer to the proper installation guidelines.





12-year warranty for Veria Quickmat, Veria Snowmat and Veria Flexicable

Veria's products have been developed for many years of trouble-free use. Assuming that they are installed correctly according to the installation guidelines we therefore provide a 12-year warranty on Veria Quickmat, Veria Snowmat and Veria Flexicable. A 2-year warranty is provided on other Veria products. The warranty covers products that appear to be defective due to manufacturing, construction or material faults.

However, the warranty is void if:

- The product has not been installed according to the installation guidelines
- It has not been connected by an authorized electrician
- The fault is caused by inappropriate/poor floor construction

The warranty is also conditional upon the accompanying proof of warranty having been filled in correctly. The proof of warranty must be retained by the owner and must be produced in the event of a claim.

In the unlikely event that you have to make use of the warranty, we will repair the product or supply a new replacement product free of charge. The warranty does not cover any indirect or additional costs such as costs relating to the localization of the fault, removing the product, repairing the floor etc.

In the event of a warranty claim, the product will be sent to Veria - as agreed in advance - with a tracking label attached, stating the nature of the fault. If our investigation shows that the product is not faulty it will be returned. If we find any faults Veria will return the repaired product or supply a new Veria product and will take away the parts that have been removed or the faulty Veria product. No additional claims may be made against Veria under the warranty.



A 12-year warranty is hereby provided for

Name:

Telephone:

Address:

Postcode & town:

Please note!

The VERIA warranty is only valid if the following details have been filled in correctly. See the conditions below. The proof of warranty must be retained by the purchaser

Heating cable laid by

Date:

Connected by

Date:

Mat length/m²:

Item number (see label):



Veria Snowmat		Result	
Insulation resistance	Before laying	=	MΩ
	Before embedding	=	MΩ
	After embedding	=	MΩ
Heating cable resistance	Before laying	=	Ω
	Before embedding	=	Ω
	After embedding	=	Ω



Installers stamp:

VERIA
 Ulvehavevej 61
 7100 Vejle,
 Denmark

E-mail: mail@veria.dk

08096270 & VIJXM102