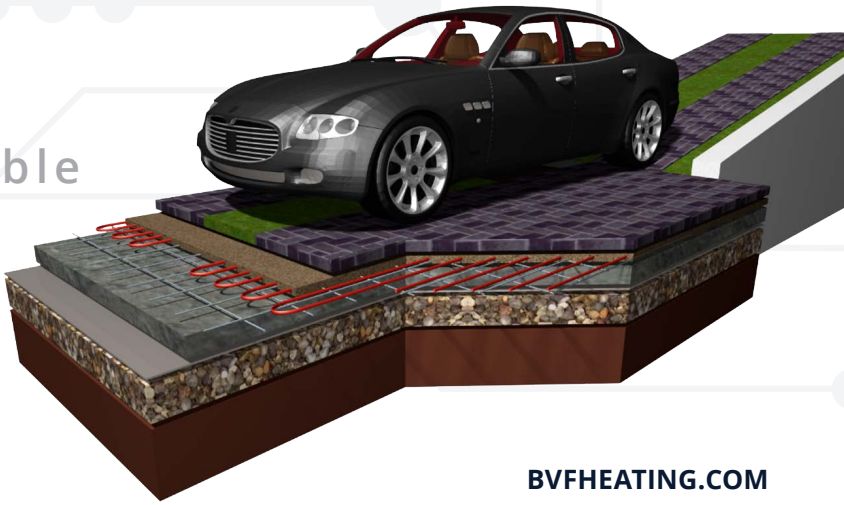
BVF Heating Solutions

BVF SX 28

Snow Defrost Heating Cable



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1. General Information

1.1 Use of the Manual

This manual describes the BVF SX heating cable — how to design and install, connect to electric system. It is important to thoroughly review this manual before installation. For additional information contact to the distributor.

1.2 Safety Guidelines

The safety and reliability of any electric heat system depends on proper design, installation, and testing. Incorrect installation or mishandling of the product can cause damage to the heating cable, system components and property, and can create a risk of fire or shock. The guidelines and instructions contained in this guide are important. Follow them carefully to minimize these risks and to ensure that the BVF SX heating cable performs reliably.

Pay special attention to the following notices:

Instructions marked Important: ℹ Safety warnings identified as WARNING: ⚠

⚠ **WARNING: Shock and fire hazard!**

- If the BVF SX heating cable is damaged or not installed properly, fire or shock hazard could occur resulting in serious personal injuries or damage to property. You must follow carefully the warnings and instructions contained in this manual.
- Use controllers designed only for electric defrosting systems.
- It is important that this equipment is installed only by qualified electricians who are familiar with the proper sizing, installation, construction and operation of electric defrosting systems and the hazards involved. Installation must comply with all national and local electrical regulations. If you are unfamiliar with these requirements, please contact an electrician.
- The BVF SX under pavement heating cable is designed for defrosting outdoor surfaces, terraces, driveways only. Be sure that the installation surfaces are well prepared for installation.
- If the BVF SX heating cable is damaged, it must be replaced. Do not attempt to splice or repair any part of the system.

1.3 Testing procedures for BVF SX cable

1. Verify that the cable you bought is the one that you received.
2. Find your model number in Table 1 and record the Ohms for later use.
3. Visually inspect the heating cable before installation to locate obvious flaws or breaks.
4. With a digital OHM meter, first check resistance between the center conductor and the ground wire (twisted copper). Reading should be OL or infinity.
5. Make sure all the red heating cable and the splice are completely embedded in the underlayment. Only the cold leads are permitted to be out of the pour.
6. During the installation of the topping, monitor the cable for any sudden changes in the ohms.
7. After the cable is installed, repeat steps 3 & 4.
8. When performing an actual amperage test, never run the cable for more than 15 seconds.
9. After the cable is installed repeat steps 4 & 5 for warranty registration purposes.

1.4 10 years Extended Warranty

For a period of ten (10) years from the date of purchase warrants that the BVF SX heating cable is free from defects in material, design and workmanship. The extended warranty is only valid if the warranty certificate has been properly completed, and the installation is in accordance with the installation instructions.

1.5 Distributor's Statemenet

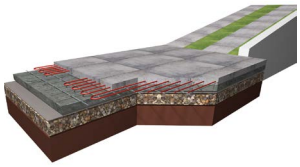
The distributor can accept no responsibility for possible errors in catalogues, brochures, other printed materials, and website information. The distributor reserves the right to alter its products without notice. 'BVF Heating Solutions' is a registered trademark of BVF Heating Solutions Ltd. All rights reserved.

2. BVF SX 28 outdoor heating cable system

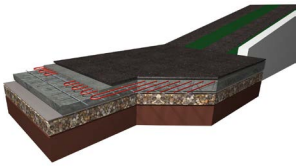
2.1 BVF SX 28 technical data

Cable Construction:	Twin conductor	**Conductor Insulation:**	XPLE
Rated Voltage:	230V	**Outer Insulation:**	PE and PVC
Output:	28W/m ±10%	**Operating Temperature:**	+ 30 °C
Bending Radius:	50 mm	**Min. Installation Temperature:**	+ 5 °C
Cable Diameter:	7,6 mm	**Cold lead:**	2-wire + ground; Length: 10m

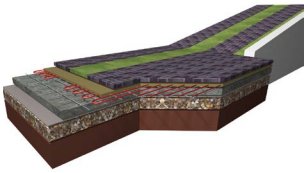
2.2 BVF SX 28 typical snow melting installations



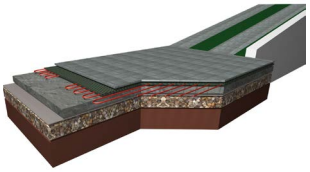
For concrete pavement
(max. 80mm)
250W/m²



For asphalt pavement
(max. 50mm)
300W/m²



For paving stone
(max. 80mm)
300W/m²

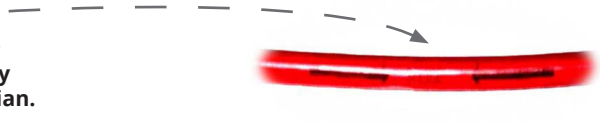


For outdoor ceramic tiles
(max. 50mm)
200-250W/m²

⚠ **By using any other pavement covers, please ask your provider about applicability.**

Important notices

- Cold lead "splice", marked about 10m from the start of cable. Actual "heating cable" located between the splice and end seal.
- **These cables are not to be installed in walls or ceilings for any reason and must be installed by a qualified, licensed electrician.**



NEVER:

- Cross the red heating cable section over itself.
- Cut the red heating cable section for any reason.
- Cross a true concrete expansion joint.
- Run the red heating cable section directly into the junction box.
- Subject any part of the red cable to harmful surfaces.

ALWAYS:

- Follow local and national electrical codes.
- Test the cable for the proper readings before, during and after the installation.
- Make certain the splice is completely buried in the pour.
- Fill out the warranty card.

3. Product selection and installation

3.1 Before you start

Field measure the area for which the cable is designed. Verify the area for the project is the same as the area originally designed. If the area has changed (larger or smaller), please contact your distributor to assure that the cable will be effective and operate in a safe manner. Check the electric supply. The heating cable is operating with AC230V. If necessary, ask your electrician for network extension. Any changes to the pre-determined design area can seriously affect the performance of the system.

3.2 General rules

Please use the factory designated spacing between the cables. This data can be found on the cable Tag that is attached to each cable. **It is very important for the cable spacing to be held to the design parameters in order to avoid installation problems.** The base for concrete should be compacted and stone and other sharpobjects, which can damage the cables, should be cleared away before laying the cable. Depending on the application, the thickness of the final covering must not exceed the maximum allowed. This is to insure that there is adequate transfer of heat to the surface. Any variation of this thickness may cause poor performance or possible damage to the heating cables. The direction of the cable layout is not important in asphalt or pavers in sand. In concrete it is strongly recommended to lay the cable across the shorter dimension of the space. If for any reason the concrete cracks, it normally cracks across the shorter dimension. It is important that the cable finishes at the same point it started, which is usually a junction box.

3.3 Selecting the appropriate cable

Verify the area for the project is the same as the area originally designed.

Type	Watts	Amps	Ohms	Length	Use	Pavement type			
						Concrete	Paving stone	Outdoor ceramic tiles	Asphalt
BVF SX 28 - 640	640W	2,78	82,7	22,9m	Area: Track (50cm):	3-4 m^2 6-8 fm	2-3 m^2 4-6 fm	4-5 m^2	2-3 m^2 4-6 fm
BVF SX 28 - 890	890W	3,87	59,4	31,9m	Area: Track (50cm):	4-5 m2 8-10 fm	3-4 m2 6-8 fm	5-6 m^2	3-4 m2 6-8 fm
BVF SX 28 - 1270	1270W	5,52	41,7	45,4m	Area: Track (50cm):	6-7 m^2 12-14 fm	4-6 m^2 8-12 fm	7-8 m^2	4-5 m^2 8-10 fm
BVF SX 28 - 1900	1900W	8,26	27,8	67,8m	Area: Track (50cm):	9-10 m^2 18-20 fm	7-8 m^2 14-16 fm	10-11 m^2	6-7 m^2 12-14 fm
BVF SX 28 - 2700	2700W	11,74	19,6	96,4m	Area: Track (50cm):	12-14 m^2 24-28 fm	10-12 m^2 20-24 fm	14-16 m^2	9-10 m^2 18-20 fm
BVF SX 28 - 3400	3400W	14,78	15,6	121,4m	Area: Track (50cm):	16-18 m^2 32-36 fm	13-15 m^2 26-30 fm	18-20 m^2	11-13 m^2 22-26 fm

⚠ **Never cut the red heating cable section for any reason!**

ℹ **Photodocumentation is highly recommended before covering pavement.**

3.4 Installation instruction

A) Concrete Applications (Cable Depth, Min. 3cm - Max. 15cm From Surface)

Flat Areas: Install re-bar or wire mesh in the area to be heated. Tie heating cable to re-bar or wire mesh with wire ties.

External Stairs: The cable should be laid lengthwise on the steps so that they only lie on the horizontal surfaces. For installations of this kind it is essential to have a roughcast concrete step as a base. The cables should be installed with the first run no more than 4-5cm from the front edge of the step. Then refer to the Cable Tag for number of runs per step and lay the remaining cable spaced evenly on the step tread. **(DISREGARD THE SPACING FORMULA WHEN DEALING WITH STEPS)** When running the cable up the riser of the step it is suggested that a groove be made in the riser in order to keep the cable flat.

Laying Of The Concrete: Concrete must be spread and leveled manually.

B) Asphalt Applications (Cable Depth Should Be 8 - 12cm From Surface)

Driveways (With Complete Cable Coverage): Cable can be installed directly on the binder layer the existing driveway with wire mesh spaced no further than 30cm apart or tied to wire mesh.

Laying Of The Asphalt: It is required that all asphalt be laid manually. Top coat grade material must be used and hand shoveled to cover the cable then using manual panel vibrators.

C) Pavers In Sand Applications (Max. Cable Depth 6-10cm From Paver Surface)

A minimum of 3cm of compacted sand should be applied for the base to lay the cable on. DO NOT lay the cable down directly on the stone base or any other sharp surface. The cable should be arranged and tied down to wire mesh / deer fencing or equivalent. Following the Cable Tag “on center” spacing formula using cable ties. A minimum of 3cm of compacted sand should then be applied on top of the cable. After the sand is compacted the final layer of pavers can be installed.