INSTALLASJONSVEILEDNING

Utendørs oppvarming
med InSnow 20T/30T

Les denne instruksen nøye før du startet installasjonen.
Du vil alltid finne siste oppdaterte veiledning på vår hjemmeside.

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Innhold

1. PRODUCT SPECIFICATIONS AND DETAILS

InSnow cable are uniquely designed for snow melting in parking bays, Drive ways, Pavements, outdoor steps, roofs, etc. with total safety.

The Insnow cable is a twin conductor with cold lead to give power connection.

Specifications:
Type: Twin conductor
Voltage: 230/400 V ACRMS
Range: Maximum 40 W/ m for InSnow Cable (Please refer product range table), Maximum 20W/m In Snow for Roof and Gutter applications.
Cold lead: 15.0 m.
Insulation: Fluoropolymer (FP) / Cross linkable polymer
Metal Sheath: Al Mylar tape with drain wire
Sheath: Polyolefin/ PVC
Outer Diameter: **In snow Cable:** 6.0 mm and 7.0 mm

The hot and cold junction is uniquely designed to make it 100% fool proof.

The product you brought has the following information

- **Type of Product**
- **Cable Length**
- **Wattage**
- **Operating Voltage**
- **Serial Number**

2. Do's & Don'ts

Do's!!!!!!!!!!!

- Check the Insnow cable immediately after receiving for transit damage and make sure that it is not in a damaged condition. Check Voltage and Wattage of InSnow cable is as per selection made, which is marked on label of the product.
- The heating cable cannot be cut.
- The cable should be separated from other heat sources such as luminaries and chimneys.
- The cold lead, normally 15m long, can be cut /extended to suit the location of the electrical power connection box.
- Minimum bending radius of the heating cable while laying shall not be less than about six times of the cable diameter.
- The installation of the snow melting system shall be in accordance with the manufacturer's instructions and local National codes.
- Take precautions to avoid damage to heating cable during installation, due to dropping of sharp objects or stepping or careless pouring of concrete or asphalt.
- Allow sufficient drying or the curing period of the concrete/asphalt after installing the heating system and before energizing the heating system.

Don'ts!!!!!!!!!!!!

- Never alter the heating cable length in any circumstances
- Never touch, cross or overlap of heating cable itself.
- Never install any cable below-10°C ambient temperature.
- Never provide Power supply in Reel form of the cable

3. Electrical provision for the InSnow cable:

The snow melting system installation wiring shall be in accordance with the national wiring rules. **RCD Installation**: Insnow cable should be connected to a Ground Fault Circuit Interrupter (GFCI) / Residual Current Device (RCD) / equivalent having a rated residual operating current not exceeding 30mA.

Incase GFCI / RCD trips during normal operation, and cannot be reset, there is likely a fault in the circuit. No attempt should be made to re-energize the system. GFCI / RCD must not be bypassed in any circumstances.

4. Control of Snow Melting System:

●A control suitable for Snow Melting system with pavement mounted sensor should be used with Insnow cables.

●The floor sensor location shall be in open area, away from trees or bushes so that it can sense moisture in the air / snow fall and initiate the energisation of heating cable.

●Keep the power leads conduit separate from the sensor cable conduit.

●Incase of Snow Melting system of load below the thermostat power rating, it can be connected directly to a control electronic thermostat as per the figure which gives typical scheme of electrical system

● For easy reference, fix a label at power distribution board indicating the location of the heating units installed.

5. Installation Instructions for Insnow cables:

Testing:
An Electrician should measure the cable resistance and Insulation resistance before commencing installation, before applying concrete/ asphalt and after the concrete/ asphalt is applied and record the readings on Control Card provided at the end of this manual.

5.1. Installation under Asphalt:

1. Use an insulation layer below the concrete subfloor (optional)

2. Apply the concrete layer of approx 50 mm over insulation and allow the concrete to set fully.

3. Clean the area below the heating cable so that it is free from sharp objects.

4. Lay the Cables according to the plan and fasten them to the Cable laying strips so that they do not move during concrete/asphalt pouring.

5. Take the cold lead of the Cable through conduit pipe into the junction box. Do not use excessive force to pull the cold leads otherwise it may damage the hot-cold splice.

6. Ensure that the heating cable and cold lead cable connections (splice joint) are completely enveloped by the asphalt (allow asphalt to cool to temperature of approx 100°C before pouring it over the splice joint) and without air pockets.

7. **There are two main installation methods for Asphalt**:
   7.1 Cables are covered with sand or concrete before Asphalt is applied:
   Before Asphalt is applied; a thin layer of sand or concrete (20 mm thick) is used to cover the top of the cables to protect them from the heat of the asphalt. Allow the asphalt to cool to a temperature of 130 to 140 deg C before it is applied. For this installation, we recommend InSnow cable

7.2 Asphalt is applied directly on the cables :
Cenika Varme recommends InSnow Asphalt for direct asphalt application as it can resist 240 deg C for a short time. With this type of cables, it is not necessary to cover the cables with sand. This reduces the time and the installation cost. In order not to damage the cables, heavy machinery (Rollers or Asphalt laying machines should not be used on the cables.

8. Position the snow sensor in the open area, away from trees or bushes so that it can sense the moisture in the air / snow fall and initiate the heating of the cables. The sensor cables must be protected by a suitable conduit pipe (suitable to 240° C short terms). The conduit pipe is sealed at the end so the asphalt cannot seep in.

9. The cold leads also should be protected by a suitable conduit pipe (suitable to 240° C short terms) and its ends sealed so that Asphalt does not seep in.

10. The asphalt should have a minimum thickness of approx 50 mm measured from the top of Insnow cable.

11. After the asphalt gets hardened, provide all the required connections (Snow sensor, thermostat etc). before switching on the heating Cable.

5.2. Installation under Concrete:

1. Follow the Sr. No 1 to 5 as mentioned in Installation under Asphalt on page 5.

2. The concrete mixture must not contain sharp stones as these may damage the cables. Pour the concrete covering the cables completely without leaving any air pockets.

3. Position the snow sensor in the open area, away from trees or bushes so that it can sense the moisture in the air / snow fall and initiate the heating of the cables. The sensor cables must be protected by a suitable conduit pipe. The conduit pipe is sealed at the end so the concrete does not seep in.

4. The cold leads also should be protected by a suitable conduit pipe and its ends sealed so that concrete does not seep in. The concrete should have a minimum thickness of approx 50 mm measured from the top of Insnow cable.

5.3. Installation under Pavers:

1. Before you commence installation, ensure that you have carefully measured the area to be heated. Draw a plan detailing the spacing of the cable and location of the power connections. Note: Ensure heating cable is at least 100mm from the edge of the pavers and from obstacles such as drains, pipes etc., and that the cable(s) selected meet your requirements.

2. An electrician should measure the cable resistance and Insulation resistance before commencing installation, before, during and after installation of the pavers.

3. Clean the area below the heating cable so that it is free from any sharp objects.

4. Take the cold lead cable/ Sensor cable through conduit pipes into the junction box.

5. Start the installation at the point nearest to the junction box where the circuit will be terminated.

Note: Take care not to damage the heating cable or cross any expansion joints.

6. Apply a minimum bed of 30mm of sand over the heating cable to ensure easy positioning of the pavers. Take care when spreading the sand not to use sharp tools that may damage the cable.

Note: All of the heating element including the manufactured joints must be embedded within sand.

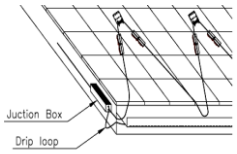
7. Brick and Stone Pavers must NOT be any thicker than 2.5” (63.5mm)

8. 1” to 1.5” (25.4mm to 38mm) of finished mortar/bedding Sand.

9. pavers to the appropriate depth so that Heating Cable / Mat ends up 2” to 3” (51mm to 76mm) from finished surface.

10. If sand is used instead of mortar, avoid dropping pavers onto the surface, as doing so may damage the heating cables.

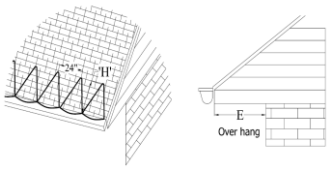
5.4 Installation for Roof and Gutter Deicing Applications (InSnow 20T).



1. Before installing the De-Icing cable, allow it to warm up to room temperature.

2. Clear all roof, gutters and downspouts of combustible debris such as leaves, pine needles, seeds or windblown trash (protect hands with gloves).

3. Remove any sharp edges that could damage the De-Icing cable. Mount waterproof junction box in sheltered area.



4. Start cable installation at the junction box, leaving a drip loop where the tracer exits at the junction box. Use only recommended types of roof clips (Cenika Varme Roof Clip) which will not damage the tracer. Cenika Varme roof clips can be used on all surfaces that can be glued, nailed or screwed into Cenika Varme roof clip and Use pliers to close the clamp, but be careful not to crush the heating cable

5. Use one clip for each 5 to 10 ft of unsupported heating cable and at every change of heating cable direction.

Range of Products:

To-leder, 30W/M, 230V				
Art.nr	Art.navn	Lengde	Watt	Ω
CVA10302	InSnow 30T 230V/450W	15	450	117,6
CVA10303	InSnow 30T 230V/600W	20	600	88,2
CVA10304	InSnow 30T 230V/750W	25	750	70,5
CVA10305	InSnow 30T 230V/900W	30	900	58,8
CVA10306	InSnow 30T 230V/1050W	35	1050	50,4
CVA10307	InSnow 30T 230V/1200W	40	1200	44,0
CVA10308	InSnow 30T 230V/1350W	45	1350	39,2
CVA10309	InSnow 30T 230V/1500W	49,7	1500	35,3
CVA10310	InSnow 30T 230V/1650W	55	1650	32,1
CVA10311	InSnow 30T 230V/1800W	60	1800	29,4
CVA10312	InSnow 30T 230V/2100W	70	2100	25,2
CVA10313	InSnow 30T 230V/2400W	78,7	2400	22,0
CVA10314	InSnow 30T 230V/2700W	89,1	2700	19,6
CVA10315	InSnow 30T 230V/3000W	98	3000	17,6
CVA10316	InSnow 30T 230V/3300W	106,9	3300	16,0
CVA10317	InSnow 30T 230V/3750W	128,2	3750	14,1
CVA10318	InSnow 30T 230V/4200W	140	4200	12,6

To-leder, 30W/M, 400V				
Art.nr	Art.navn	Lengde	Watt	Ω
CVA10330	InSnow 30T 400V/1500W	50	1500	106,7
CVA10331	InSnow 30T 400V/2100W	69,3	2100	76,2
CVA10332	InSnow 30T 400V/2900W	95,1	2900	55,2
CVA10333	InSnow 30T 400V/3300W	98,9	3300	48,5
CVA10334	InSnow 30T 400V/3900W	114	3900	41,0
CVA10335	InSnow 30T 400V/4500W	127	4500	35,6
CVA10336	InSnow 30T 400V/5100W	142,6	5100	31,4
CVA10337	InSnow 30T 400V/5700W	187,1	5700	28,1
CVA10338	InSnow 30T 400V/6300W	230,9	6300	25,4

To-leder, 20W/M, 230V				
Art.nr	Art.navn	Lengde	Watt	Ω
CVA10340	InSnow 20T 230V/340W	20	340	155,6
CVA10341	InSnow 20T 230V/600W	30	600	88,2
CVA10342	InSnow 20T 230V/900W	40	900	58,8
CVA10343	InSnow 20T 230V/1000W	48,1	1000	52,9
CVA10344	InSnow 20T 230V/1250W	60	1250	42,3
CVA10345	InSnow 20T 230V/1400W	65,1	1400	37,8
CVA10346	InSnow 20T 230V/1600W	67,5	1600	33,1
CVA10347	InSnow 20T 230V/1800W	81,6	1800	29,4
CVA10348	InSnow 20T 230V/2000W	94,5	2000	26,5
CVA10349	InSnow 20T 230V/2450W	120	2450	21,6
CVA10350	InSnow 20T 230V/2800W	126	2800	18,9
CVA10351	InSnow 20T 230V/3200W	150,3	3200	16,5
CVA10352	InSnow 20T 230V/3600W	163,3	3600	14,7

To-leder, 20W/M, 400V				
Art.nr	Art.navn	Lengde	Watt	Ω
CVA10361	InSnow 20T 400V/600W	34	600	266,7
CVA10362	InSnow 20T 400V/800W	45,4	800	200,0
CVA10363	InSnow 20T 400V/1000W	56,7	1000	160,0
CVA10364	InSnow 20T 400V/1200W	68	1200	133,3
CVA10365	InSnow 20T 400V/1400W	79,4	1400	114,3
CVA10366	InSnow 20T 400V/1600W	90,9	1600	100,0
CVA10367	InSnow 20T 400V/1800W	102,2	1800	88,9
CVA10368	InSnow 20T 400V/2000W	112,7	2000	80,0
CVA10369	InSnow 20T 400V/2300W	120	2300	69,6
CVA10370	InSnow 20T 400V/2800W	158,7	2800	57,1
CVA10371	InSnow 20T 400V/3200W	178,6	3200	50,0
CVA10372	InSnow 20T 400V/3600W	202	3600	44,4
CVA10373	InSnow 20T 400V/4000W	222,2	4000	40,0

7. WARRANTY

Cenika Varme AS provides a warranty for the Insnow Cables for a period of 25years from date of installation.

In case of defective Cable, Cenika Varme AS obligation will be limited to repair or supply a new Cable, free of charge to the customer.

The warranty does not cover installations made by unauthorized persons or faults caused by incorrect design by others / misuse / damage caused by others / damage in transit / incorrect installation and any other subsequent damage that may occur. Repair / replacement will be fully chargeable if the damage is because of any of the above reasons.

Cenika Varme AS is under no circumstances liable for consequential damages or losses including without limitation the loss or profit arising from any cause whatsoever. The warranty is a material warranty only for the heating cable and does not cover field labor.

The warranty is void if there is any payment default, details are not entered on Control Card and We recommend the control card is registered online.

8. CONTROL CARD

Sl. No.	Test	Before commencing of installation	After installation but before final flooring	After final flooring
	Kontinuitet			
	Isolasjonsmotstand (M.ohm)			
	Motstand (Ohm)			
Address of Installation				
Date of Installation				
Name & Signature of Qualified Electrician				
Note: Ensure this control card is filled & signed by authorized electrician and safely stored along with your floor plan.				

YOUR FLOOR PLAN