



The World Best

ENERPIA Co.,Ltd.

Installation instructions

Snow melting cable

Before installation, carefully read this manual and prepare the required products.

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Snow melting cable Installation instructions

1 General instructions

- 1) **Application scope** These specifications provide a detailed description of how to install snow melting cables and apply to the cutting and routing methods.
- 2) **Applied rules** Power connection construction of the snow melting cable:
Electricity work

2 Materials



■ Snow melting cable
[for concrete]



■ Snow melting cable
[for ascon]



■ Snow melting cable
[for both concrete
& ascon]



■ Snow melting
controller



■ Snow melting
sensor



■ Shrinkable tube



■ Mounting band
[for routing]



■ Non-contraction
mortar agent
[for cutting]

3 Construction

Precheck

Either the cutting method or routing method shall be selected subject to road deterioration and other local requirements.

1) Construction preparation

- ① Restrict the movement of the vehicles before the construction to prevent the problems in the product that may occur during the construction in advance.
- ② Finally verify the road surface state for the installation of the snow melting cable, and remove and repair the bumps or other dangerous elements that may cause the damage of the snow melting cable.

2) Check electricity capacity

- ① Check the drawings and details of the place where the snow melting cable will be installed, and check that the model and quantities for each material match.
- ② Check the insulation resistance and the resistance value of the snow melting cable to decide if it is suitable.

 Considerations

1) Snow melting cable application specification (220V based)

- Snow melting, 40W/m, coverage 100%, grounding type

Model	Product dimensions	Space requirements	Power consumption	Remarks
EP – SC Series				
EP22.5SC	22.5m x Ø7.5mm	3.3m ² (1.0py)	900Wh	40W/m Ø7.5mm Heating cable with Ø3mm rein- forced wire.
EP45SC	45m x Ø7.5mm	6.6m ² (3.0py)	1800Wh	
EP67.5SC	67.5m x Ø7.5mm	9.9m ² (3.0py)	2700Wh	
EP90SC	90m x Ø7.5mm	13.2m ² (4.0py)	3600Wh	
EP112.5SC	112.5m x Ø7.5mm	16.5m ² (5.0py)	4500Wh	
EP – SA Series				
EP22.5SA	22.5m x Ø7.5mm	3.3m ² (1.0py)	900Wh	40W/m Ø7.5mm Heating cable, SUS braided.
EP45SA	45m x Ø7.5mm	6.6m ² (3.0py)	1800Wh	
EP67.5SA	67.5m x Ø7.5mm	9.9m ² (3.0py)	2700Wh	
EP90SA	90m x Ø7.5mm	13.2m ² (4.0py)	3600Wh	
EP112.5SA	112.5m x Ø7.5mm	16.5m ² (5.0py)	4500Wh	

Model	Product dimensions	Space requirements	Power consumption	Remarks
EP SMC – Series (1core)				
EP22.5SMC	22.5m x Ø6.5mm	3.3m ² (1.0py)	900Wh	40W/m
EP45SMC	45m x Ø6.5mm	6.6m ² (3.0py)	1800Wh	
EP67.5SMC	67.5m x Ø6.5mm	9.9m ² (3.0py)	2700Wh	
EP90SMC	90m x Ø6.5mm	13.2m ² (4.0py)	3600Wh	
EP112.5SMC	112.5m x Ø6.5mm	16.5m ² (5.0py)	4500Wh	
EP SML – Series (2core)				
EP22.5SML	22.5m x Ø6.5mm	3.3m ² (1.0py)	900Wh	40W/m
EP45SML	45m x Ø6.5mm	6.6m ² (3.0py)	1800Wh	
EP67.5SML	67.5m x Ø6.5mm	9.9m ² (3.0py)	2700Wh	
EP90SML	90m x Ø6.5mm	13.2m ² (4.0py)	3600Wh	
EP112.5SML	112.5m x Ø6.5mm	16.5m ² (5.0py)	4500Wh	

※ The product dimensions (lengths), power consumption and space requirements can be provided on a custom-made basis.

2) Application criteria by facility (usage)

Min. average temperature (Jan. ~ Feb.)	Snowfall (cm/hr)	Sidewalk and road (W/m ²)	Bridge (W/m ²)	Stair (W/m ²)	Dock (W/m ²)
-2°C	1.7cm	170W	200W	170W	250W
-6°C	2cm	200W	2540W	200W	300W
-10°C	2.5cm	250W	300W	250W	350W
-15°C	3cm	300W	350W	300W	400W
-20°C	4cm	350W	400W	350W	450W

※ The above table may be different according to the installation and working condition.

 Note

1. Use flame retardant cable (TFR-CV) that is strong against heat for the power cable.
2. When the snow melting cable is used by connecting to phase 3 delta connection, connect by minimizing the unbalanced load.
3. For the snow melting cable with wide installation area, select each section, and install separate electricity distribution panel to minimize the required power cable.
4. Road cutting method is the case of constructing in the existing road, and if the site optimization of the exterior such as reclamation of the power cable, etc. is difficult, solve the problem through the in-advance construction discussion.

✓ Construction procedure

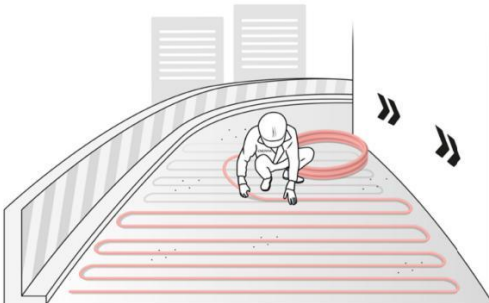
▪ Procedure of cutting method installation

1) Procedure of cutting method installation



- ① Cut the road based on the design drawing, cutting specification is 1 cm ~ 1.5cm width and maximum 5cm depth.
- ② During the road cutting, design with the consideration of the heat generation line's resistance value, and construct according to the site situation.

2) Snow melting cable routing



- ① Coldlead wire and molded part other than snow melting cable shall be constructed inside pipe or at the edge of ramp, if possible, for protection, and use the product with heat resistance and durability.
- ※ If it is embedded in concrete or asphalt, to prevent crack by temperature difference of the floor surface, cable pitch shall be as small as possible. (within 200mm)

3) Snow melting sensor installation

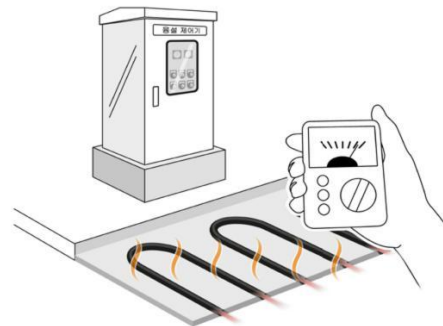
Snow melting sensor shall be installed outside the building, and embedded in the part where the wheels roll over the road surface parallel to the road surface.

4) Road finish



- ① Before the pavement material placing, check insulation resistance value of each product to check if it is disconnected.
- ※ When insulation resistance value is checked, it shall be at least 20MΩ or more.
- ② Finish the road using sealants or high strength mortar.
- ※ Have at least 2~3 days curing period for the finished part before the vehicle pass.

5) Snow melting controller (Control Panel) installation



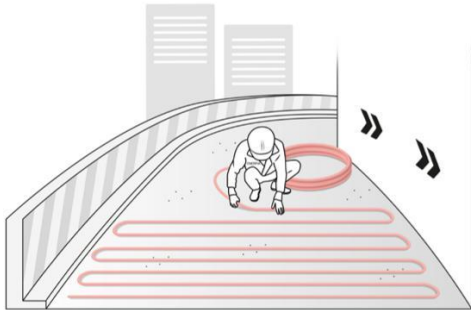
- ① It shall be inspected if, for the distribution panel-board or low-voltage panel, a correct circuit breaker has been selected to meet the total load capability of the snow melting cables.
- ② According to the design drawing, it shall be installed either indoor or outdoor with the upper side of its panel staying within 2000mm above the ground level, subject to local requirements.
- ③ For the case of underground parking lot lamp, if a separate embedding space is secured, apply embedding type and use stainless steel which is strong against corrosion for the cover.

6) Trial operation

- ① Check manual operation status.
- ② In automatic operation status, apply artificial moisture (water) and temperature (ice) on the sensor part to check if it works.

▪ Procedure of routing method installation

1) Snow melting cable routing

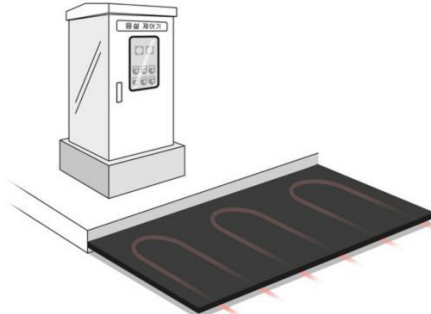


- ① Based on the drawing, route the snow melting cable on the road surface, and fix with concrete gun or cable tie.
 - ② For uniform interval, use wire mesh or mounting band.
 - ③ Coldlead wire and molded part other than snow melting cable shall be constructed inside pipe or at the edge of ramp, if possible, for protection, and use the product with heat resistance and durability.
- ※ If it is embedded in concrete or asphalt, to prevent crack by temperature difference of the floor surface, cable pitch shall be as small as possible. (within 200mm)

2) Snow melting sensor installation

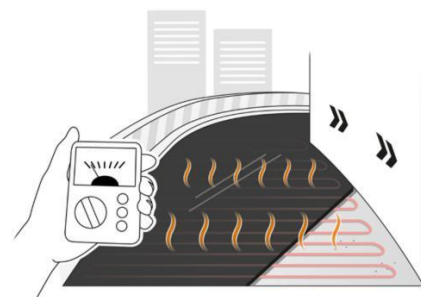
Snow melting sensor shall be installed outside the building, and embedded in the part where the wheels roll over the road surface parallel to the road surface.

3) Pavement material placing



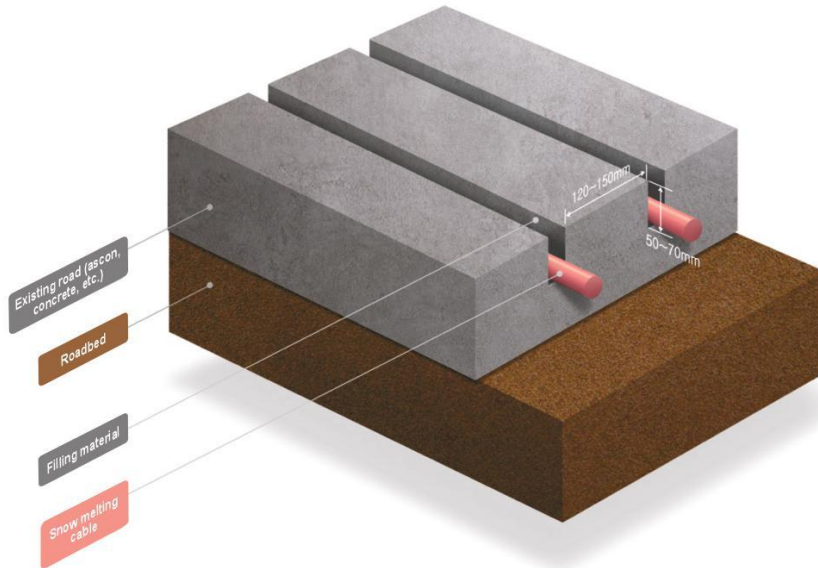
- ① Before the pavement material placing, check insulation resistance value of each product to check if it is disconnected.
- ※ When insulation resistance value is checked, it shall be at least 20MΩ or more.
- ② Place the pavement material not to damage the snow melting cable, and if possible, carry out the placing work in 2 stages. (Total height 50mm~70mm)
 - ③ The primary placement of paving shall be made to the extent that the routed snow melting cables are just invisible. It shall then be hardened by the roller. The secondary placement of paving shall reach the required height with the finisher applied at the end.

4) Snow melting controller (Control Panel) installation



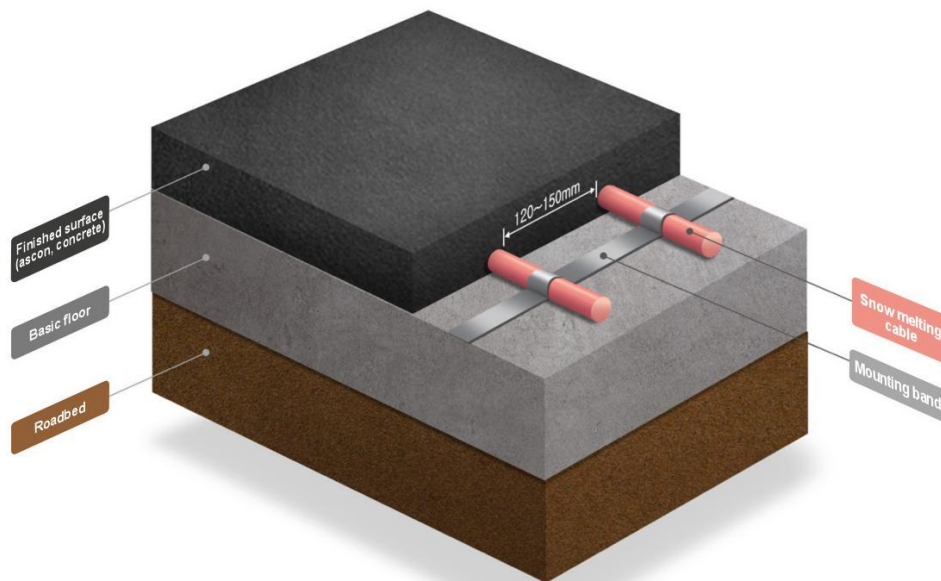
- ① It shall be inspected if, for the distribution panel-board or low-voltage panel, a correct circuit breaker has been selected to meet the total load capability of the snow melting cables.
- ② Based on the drawing, install outside or inside the building, and it is the principle to install the top of the panel within 2000mm from the floor surface, but adjust according to the site condition.
- ③ For the case of underground parking lot lamp, if a separate embedding space is secured, apply embedding type and use stainless steel which is strong against corrosion for the cover.

Snow melting cable construction cross-sectional diagram (Cutting method)



* Embedding depth and the pitch interval shall be agreed according to the site situation.

Snow melting cable construction cross-sectional diagram (Routing method)



* Embedding depth and the pitch interval shall be agreed according to the site situation.