Trace Heating Systems Serving
Your Industrial and
Domestic Requirements

Snow and Ice Melting

Self-Regulating RampTrace

HTS Global Technologies GmbH
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Worldwide Specialists in Electric Heat Tracing

Self-Regulating Snow and Ice Melting

Snow and ice on walkways, ramps, stairs, bridges and asphalt may cause restictions in their usage and danger for pedestrians and vehicles. A person could slip out on your sidewalk and you are faced with a law suit or your garage driveway has a large slope that causes problems, by snow and ice, to leave or enter the garage without damaging the vehicle.

Most of the residences do not have a janitor or other person to clear these areas while at work or on vacation and clearing the areas of snow and ice is a waste of expenses and time consumtion.

When using our self-regulating ThermTrace® RampTrace these are a problem of the past. The embedding of RampTrace in concrete and under asphalt helps to ensure that the desired electrical heated area remains clear of snow and ice.

Due to the self-regulating characteristic of RampTrace, the electrical heating applies heating only when necessary and prevents ice from forming on cold surfaces and melts the snow as it falls. It is an efficient, permanent and cost relative method of ensuring access to these areas without using chemicals and salts that cause environmental damages.

Self-regulating heating tapes consist of two parallel buswires, embeded semi-conductive self-regulating matrix. This means that the heating cable automatically responds to changes in ambient conditions.

With increase in temperature, the synthetic material expands by molecular force, and the connections between the carbon particles diminish, reducing the load. Conversley, as the temperature decreases, so the load increases as the connections between the carbon particles increases accordingly.

Thus, the heating power varies according to the temperature of the surface the heating tape is applied to.

Self-regulating heating tapes will not overheat or burnout - even when overlapped or when a air pocket is present in the concrete.

The heating cable is designed for domestic and commercial applications and does not require any special knowledge. The heating cable should however be tested and connected to the network accoding to local and electrical standards by certified electricians.

RampTrace is cut-to-length from the reel so that shorter or longer circuits may be installed according to need and to prevent material wastage. Attention is to be paid to the maximal circuit lengths.

Heat loss calculation:

General Heat losses depending on weather conditions. These value are experience values.

Very severe weather (Russia).....250 - 350 W/sq.m
Severe weather (Germany).....200 - 300 W/sq.m
Mild weather (UK).....150 - 250 W/sq.m

Determine the installation spacing between cables:

In concrete.....300mm
In sand bed.....250mm

Determine the necessary cable length:

Driveways and sidewalks

$$\frac{\text{Surface area to be heated}}{\text{Heater cable spacing}} \times 1000$$

Stairways

no. stairs x 2 x (width(m) + 0.5)

Calculated length from above + 1m for connections.

Choose circuit breaker according to length and start-up temperature.

*Please note that information of this publication are subject to change without notice!

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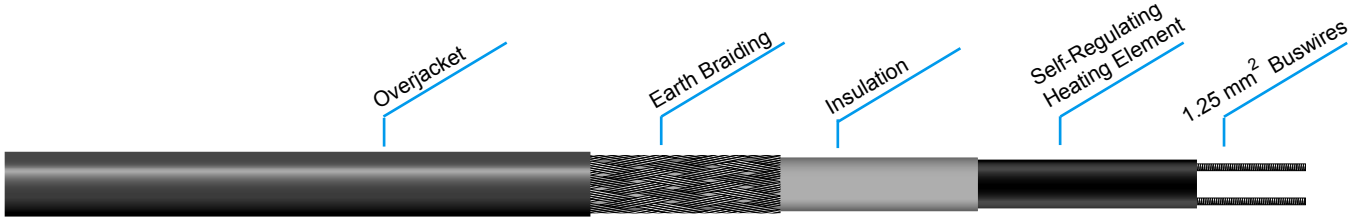
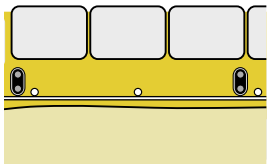
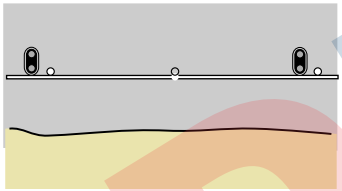


Surface finishes:

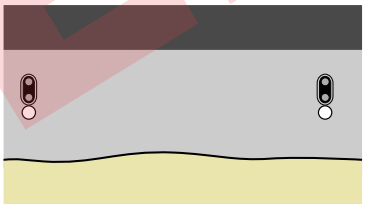
Where paving blocks are used, the heaters may be placed 20-30mm below these in sand.



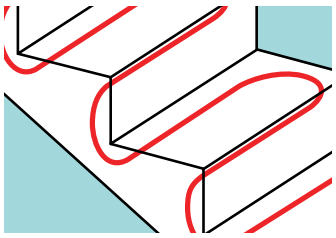
The heaters are embeded 50-70mm below the surface when placed in concrete.



The heaters are embedded 20 mm under the concrete surface under asphalt. The self-regulating heaters may not be placed in the asphalt due to temperature.



The heaters are to be placed 50mm innen and 50mm deep from the stair edges.



An additional 20% loading is recommended for heat losses to bottom for suspended bridges, stairways and ramps. Consideration should be made to compensate the heat losses to bottom by installing thermal insulation.

Technical data ThermTrace RampTrace Super:

Power output	65 W/m @0°C
Power output in concrete	90 W/m @0°C
Nominal voltage	230V
Maximal exposure temperature (unpowered)	120°C
Maximal exposure temperature (powered)	120°C
Maximal bending radius	25mm
Minimum installation temperature	-30°C
Dimensions	10.4x4.5mm

Snow and Ice Melting Questionaire

Dimensions of area to be heated

- Width _____m
- Length _____m
- Total area (W x L) _____m^2

Construction of area to be heated

- Cement _____
- Paving blocks, Sand _____
- Asphalt, cement _____
- Sand bed _____
- Stairway _____

Maximal exposure temperatue _____°C

Minimal ambient temperature _____°C

Country to be installed _____

Voltages available _____V

Power available _____W

Frequency _____Hz

Type of electrical heating desired

- Self-Regulating _____
- Series Resistance _____

For domestic purposes _____

For industrial purposes _____

Suspended areas to be heated _____

- Insulation type _____
- Insulation thickness _____

Type of controller needed

- for display panel _____
- Wall mounted _____