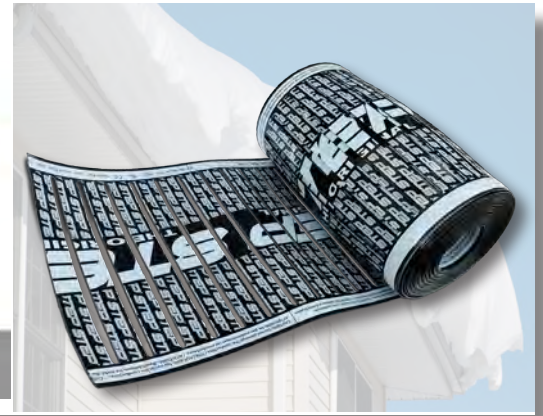


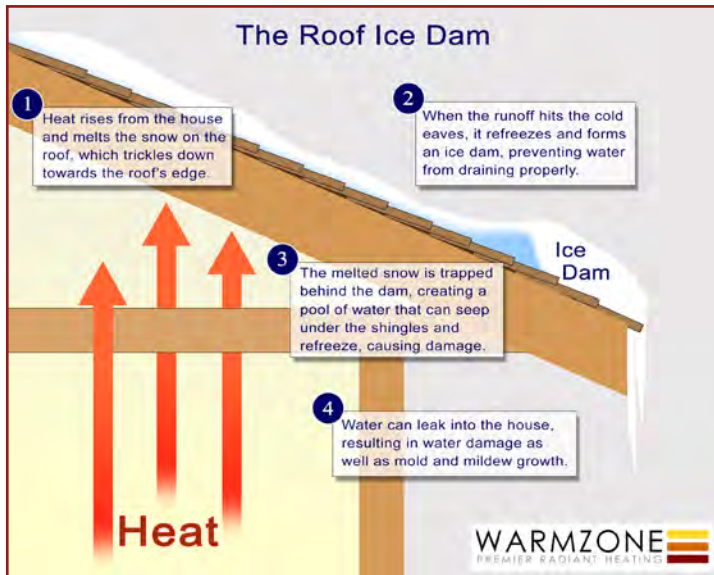
# RoofHEAT

STEP Low-voltage Roof Deicing Systems



## Low-Voltage Roof De-icing System

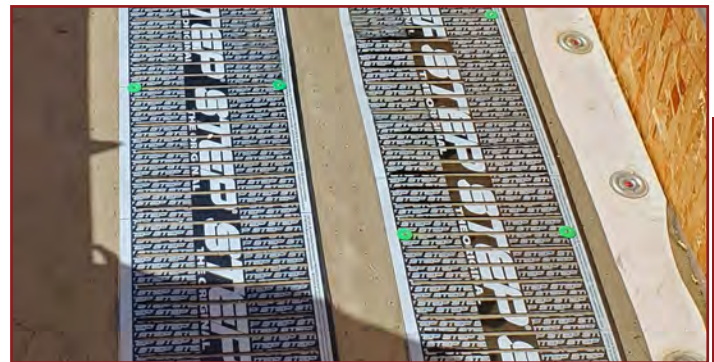
Warmzone's innovative low-voltage roof de-icing systems feature a unique, self-regulating, semi-conductive polymer heating element that is very thin and can be cut on site and discreetly nailed or stapled under shingles for quick, easy installation. The advanced heating element is polypropylene fused during fabrication to achieve water proofing.



How ice dams form on roof edges.

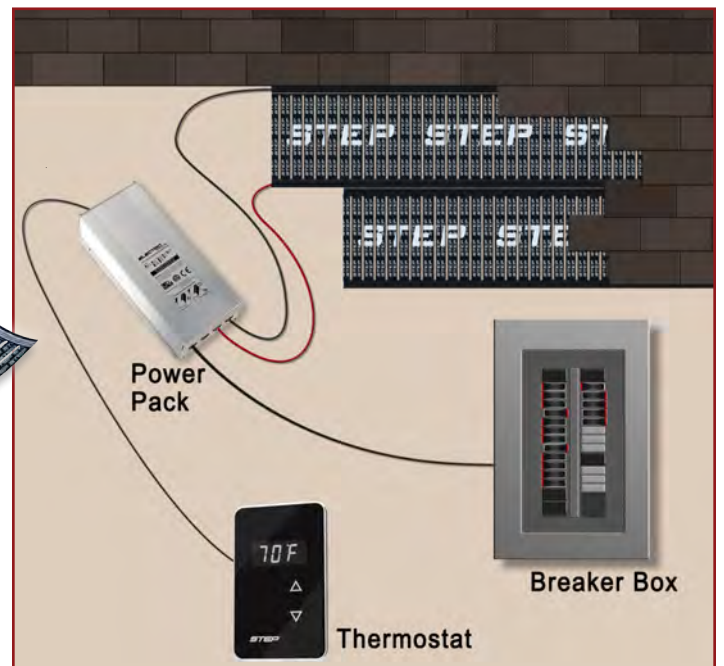


Warmzone low-voltage roof heating element installed in roof valley.



Heating element being installed under a metal roof at a public library.

Roof De-icing



Overview of Warmzone low-voltage roof heating system with element being installed under the shingles at the building's edge.

# Low-voltage Roof De-icing System

## Automated Roof De-icing System

### How it Works

Warmzone's roof de-icing systems involve three main components: the polymer heating element, a step-down transformer, and an activation device (i.e., an aerial-mount snow switch and/or temperature sensor) that automatically triggers the system when weather conditions warrant.

The transformer is responsible for a specific section of the de-icing system, and can step down from high voltage to low voltage (60 V or less). It is the source for monitoring the power and output to the system's heating element to ensure safe, accurate performance of the roof de-icing system.

The activation device/snow sensor (typically mounted at the roof's edge) signals the control panel when weather conditions warrant. The sensor detects moisture and temperature, so when snow begins to fall and the temperature is below the set point (usually 39°F), the sensor signals the controller, which then sends power to the heating element to warm the roof.

### Features and Benefits

- **Extremely Thin Profile** – The flexible heating element is just 3/64-inch, allowing for simple, discreet installation under roofing.
- **Self Regulating** – When the ambient temperature rises, the electrical resistance increases and the consumption of electricity decreases, preventing the element from overheating and ensuring energy-efficient operation.
- **Maintenance Free** - The system has no moving parts and is maintenance free.
- **Easy Installation** – Roll out the flexible heating element and cut to size while on the job site for a perfect fit.  
Unlike many other roof heating systems, the low-voltage polymer heating element can be nailed or stapled through, simplifying the installation process.
- **Versatile** - Warmzone's low-voltage system can be safely installed under most roofing materials, including metal.
- **Power Options** - The system operates on 24 volts (AC/DC) and can also be connected to a wind or solar power supply.
- **Protective Polypropylene Fabrication** – The product is polypropylene fused during fabrication to achieve water proofing.
- **Energy Efficient** - The roof heating system requires minimal power consumption. For even greater energy savings when heating metal roofs, use a heat retention mat.



*Mountain cabin with low-voltage roof de-icing system installed at the roof edges.*

# RoofHeat STEP Roof De-icing System Specs



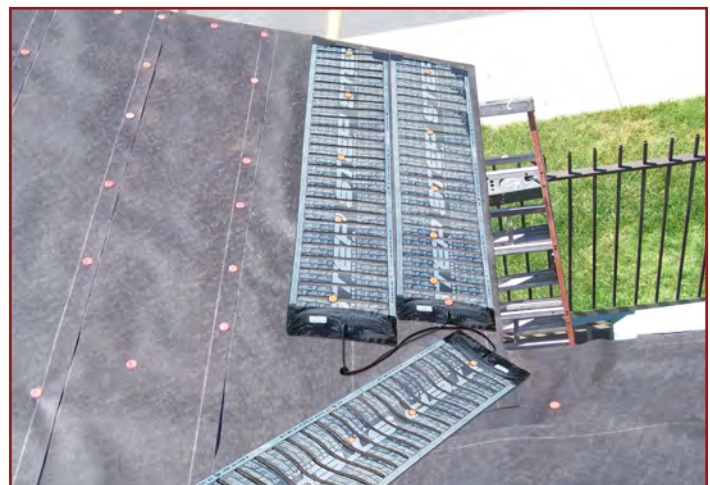
The thin RoofHeat STEP polymer heating element comes in widths of 3, 9 and 12-inches and can be nailed or attached with fasteners or screws under a variety of roofing materials, including shingles and metal.

The fully automated maintenance-free roof de-icing system is one of the most advanced and efficient roof de-icing systems available. The PTC nano-technology allows the elements to heat with maximum power in cold environments and use less electricity as they warm up. This minimizes power consumption and can reduce roof de-icing costs by 30 to 60 percent compared to conventional cable systems.



## RoofHeat STEP Power Supply Technical Data

Low-voltage dry type isolation power supply
Extruded aluminum profile enclosure with heat sink
120, 208, 240 VAC primary and 24 VAC secondary
Primary and secondary circuit protection
RoHS compliant interface board
2-year warranty



*Heating element being installed under shingles.*

## Heating Element Technical Data

Heating technology	Positive temperature coefficient (PTC) semi-conductive polymer
Width	12 inches (305mm); Also available in widths of 3, 9 inches.
Thickness	3/64 inch (1.2mm)
Length	Cut to order (maximum per strip: 32 feet (9.75 meters))
Secondary draw per foot	24 volts @ 68°F (20°C): 45 amps 24 volts @ 32°F (0°C): 54 amps
Warranty	10 years
Approvals	ETL listed; hazardous
Certifications	Class I, Div.2 Groups A,B,C,D Class II, Div.2 Groups F,G Class III

Roof De-icing

# WARMZONE ROOFHEAT STEP ORDERING INFORMATION



## Heating Element

Item Code	Description (width)	Output @ 68°F	Output @ 32°F	Voltage
MEP-30-36W	12-inch wide heating element	11.0 W/ft.	13 W/ft.	120, 208-240
MEP-30-70W	12-inch wide heating element	21.3 W/ft.	24 W/ft.	120, 208-240
MEP-23-36W	9-inch wide heating element	11.0 W/ft.	13 W/ft.	120, 208-240
MEP-23-80W	9-inch wide heating element	24.0 W/ft.	27 W/ft.	120, 208-240
MEP-7-30W	3-inch wide heating element	9.5 W/ft.	11 W/ft.	120, 208-240

## Power Supply

Item Code	Description	Amperage	Voltage
EPI-LX-R-250	Power supply w/regulator, 250 W	1 x secondary circuit 25A	120, 240
EPI-LX-R-500	Power supply w/regulator, 500 W	1 x secondary circuit 25A	120, 208-240
EPI-LX-R-1000	Power supply w/regulator, 1000 W	2 x secondary circuit breakers	120, 208-240
EPI-LX-R-1500	Power supply w/regulator, 1500 W	2 x secondary circuit breakers	120, 208-240



## Controls

Item Code	Description	Voltage
EPI-LX-TC	Thermostat Touch sensor - 24V	120, 208-240
EPI-LX-TS	External Sensor (for EPI-LX-TC)	

## Accessories

Item Code	Description
T-Block	Terminal block 2-bar
TBE-4	Terminal enclosure
TBE-6	Terminal enclosure
MEP-C&T	Factory connections with 7' of 12 AWG
C&T-10	Connector & tape kit (10 pieces per pack)
CON-DB	Connector DB TCU (priced per piece)
TAPE-R	Roll of sealant tape
TCU14-Black/White	Tinned copper wire, 14 AWG (priced per foot)
TCU12-Black/White	Tinned copper wire, 14 AWG (priced per foot)
TCU10-Black/White	Tinned copper wire, 14 AWG (priced per foot)
3-Conductor	Signal wire from power supply (priced per foot)
TOOL-PRO	Crimp tool
PET-TAPE-10	Roll of double coated tape - 3 inches x 30 feet
PET-TAPE-5	Roll of double coated tape - 3 inches x 15 feet
OMNI-1.4	Polyurethane padding (priced per 100 square feet)

*Warmzone low-voltage heating element with heat retention pad being installed on roof of commercial facility.*

