WARMZONE

PREMIER RADIANT HEATING

PRODUCT CATALOG

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Warmzone Radiant Product Catalog

Contents

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Warmzone products have been featured on the DIY Network and in the Wall Street Journal.

supports green power

WARMZONE
PREMIER RADIANT HEATING

National Association of Custom Home Builders "Vendor of the Year."

About Warmzone

General Information - Products and Services

Warmzone is a leading international provider of interior and exterior radiant heat solutions. Our wide selection of products and unsurpassed customer services have established Warmzone as the trusted radiant heat solutions provider. From large commercial applications to custom residential projects, Warmzone has the top products, services and professional staff to provide the ideal radiant heat solution.

Warmzone Solutions Include:

- Industrial, Commercial and Residential Solutions
- Snow and Ice Melting
- Radiant Floor Heating
- Roof Deicing and Gutter Trace
- Pipe Tracing
- System Design and Engineering
- Installation Support and Training
- Electric and Hydronic Radiant Solutions

Warmzone includes complete engineering and design services with each system. You'll find our professional staff to be extremely knowledgeable, friendly, and responsive. From project inception to completion, we will work with you to ensure that all your project needs are met.

The Complete Solution and Best Value

Warmzone offers more than the latest industry-leading radiant heat products. We partner with you to install the best radiant heat system for your needs and budget. In addition to top quality products, Warmzone includes unmatched system design/layout and engineering services, as well as expert installation training and support.

Our superior customer and installation services are why Warmzone has gained its reputation as a trusted provider of radiant heat solutions. When it comes to the complete radiant heat solution, you won't find a wider selection of proven products or a more knowledgeable, helpful and friendly staff.

> *"The staff at Warmzone was by far the most professional, responsive and knowledgeable of all those with whom I dealt."*
>
> Benson R. - TileMaster (Business Owner)

Warmzone makes the process of selecting, purchasing and installing a radiant heat system as seamless as possible. Our expertise and superior service are just some of the reasons why construction professionals and homeowners alike consistently choose Warmzone.

> *Warmzone is with you every step of the way; from initial consultation and project analysis to purchase, system design and installation.*

Summary of Benefits

Call a radiant heat expert at Warmzone for a free consultation (toll free: **888.488.9276**). Or visit Warmzone online (www.warmzone.com) and then call us to learn more about your radiant heat options.

- Free Consultation and Analysis with an Experienced, Unbiased Radiant Heat Expert
- Wide Selection of Proven Products
- Complete System Design (AutoCAD) and Engineering Services
- Industry Leading Electric and Hydronic Radiant Heating Solutions
- Post-sales Technical Support
- Expert Installation Support
- Professional Training
- Free Quote Services

To receive a radiant heat quote or system design, contact Warmzone today at **888.488.9276**, or visit us online at www.warmzone.com. Our experts are happy to answer any questions you may have, with no sales pressure or obligation.

To submit your project for a design/quote, fax your project information to Warmzone at 801.948.7599.

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Snow Melting, Roof Deicing, Pipe Tracing, and Floor Heating Solutions

Project Photos

Warmzone roof deicing heat cable installed in commercial gutter trace application.

Warmzone radiant floor heating mats shown under ceramic tile for heated floor.

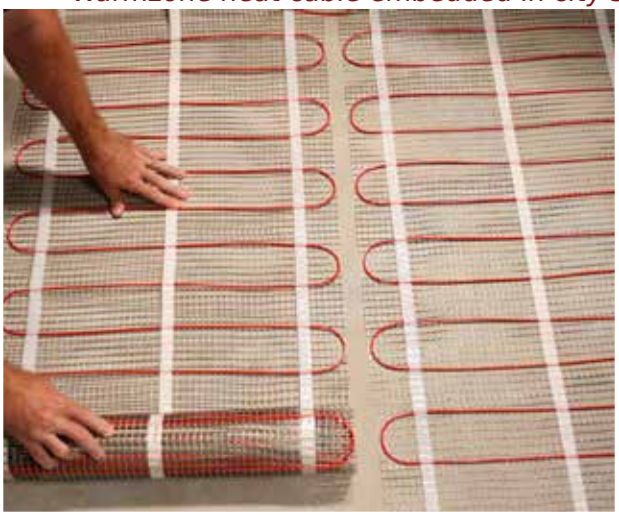
Warmzone floor heating mats.

Radiant heated driveway.

Warmzone RoofHeat STEP low-voltage roof deicing system heating roof valley and edges.

Warmzone heat cable embedded in city sidewalks.

Installing heat cable in Prodeso® membrane.



Installing floor heating mats.

Warmzone snowmelt system installed in parking lot ramp.

Pipe tracing system installed.

Warmzone snow melting system installed in paver driveway.

Professional System Design, Installation Training, and Technical Support Services

Industry Leading Customer Services

What truly differentiates Warmzone from the competition is its customer service. In addition to its experienced design team providing detailed AutoCAD layouts, Warmzone offers free installation training courses with certificates of completion. And should you need, Warmzone electricians and designers are also on hand to provide technical support during the installation process. We work with you every step of the way to make the process of installing a radiant heat system as easy as possible.

Professional Design Services

Warmzone custom designs each radiant heat system to ensure it meets each project's specific needs. The AutoCAD layouts contain all the specs and information necessary, so you'll know all the technical information, including load calculations, breaker sizes, number of breakers, etc., prior to any installation taking place.

Warmzone Training Services

A radiant heating system is only as good as the installation - which is why Warmzone provides a valuable installation training program. Warmzone's professional training services include courses on radiant snowmelt, roof deicing and floor heating system installation.

Installers who successfully complete the training recieve a dated certificate from Warmzone, documenting their knowhow in radiant heat installation. Subsequently, Warmzone can recommend your business if a customer in your area is interested in installing a radiant heat system.

Warmzone offers free installation training as well as professional design/layout services and installation support.

Installation Support Services

Warmzone's installation support services further distinguish it from other radiant heat providers and distributors. Warmzone provides a dedicated staff of experts to assist you throughout the installation process if you need. This valuable resource gives your business a wealth of expertise to draw from and helps to ensure timely, successful installations - and repeat business.

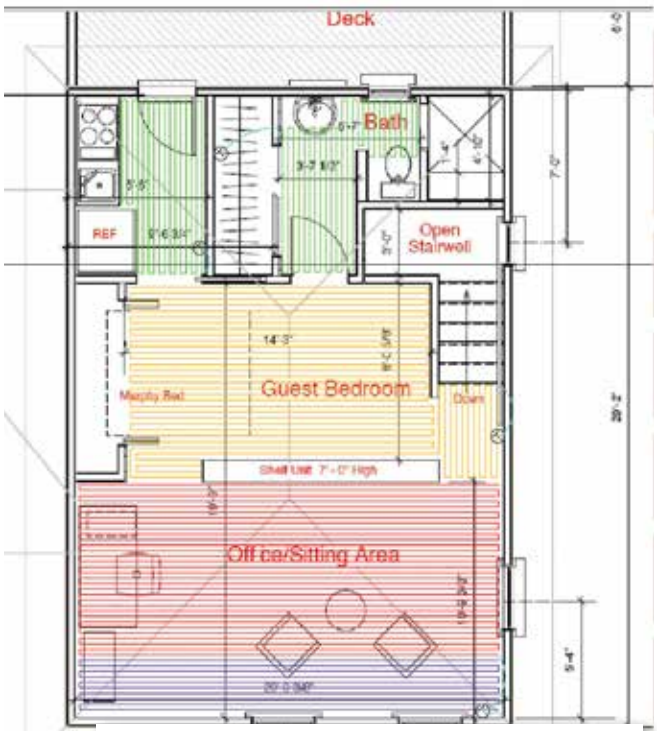
When you work with Warmzone, you are partnering with experienced professionals who stand beside you throughout the purchase, design, and installation process. Our goal is to make the installation of radiant heat as easy as possible for you and ensure the success of your business. Enhance your bottom line with peace of mind by utilizing the trusted services and expertise of seasoned professionals whose goal is your success.

WARMZONE
PREMIER RADIANT HEATING

Warmzone Provides Engineering and Shop Drawings

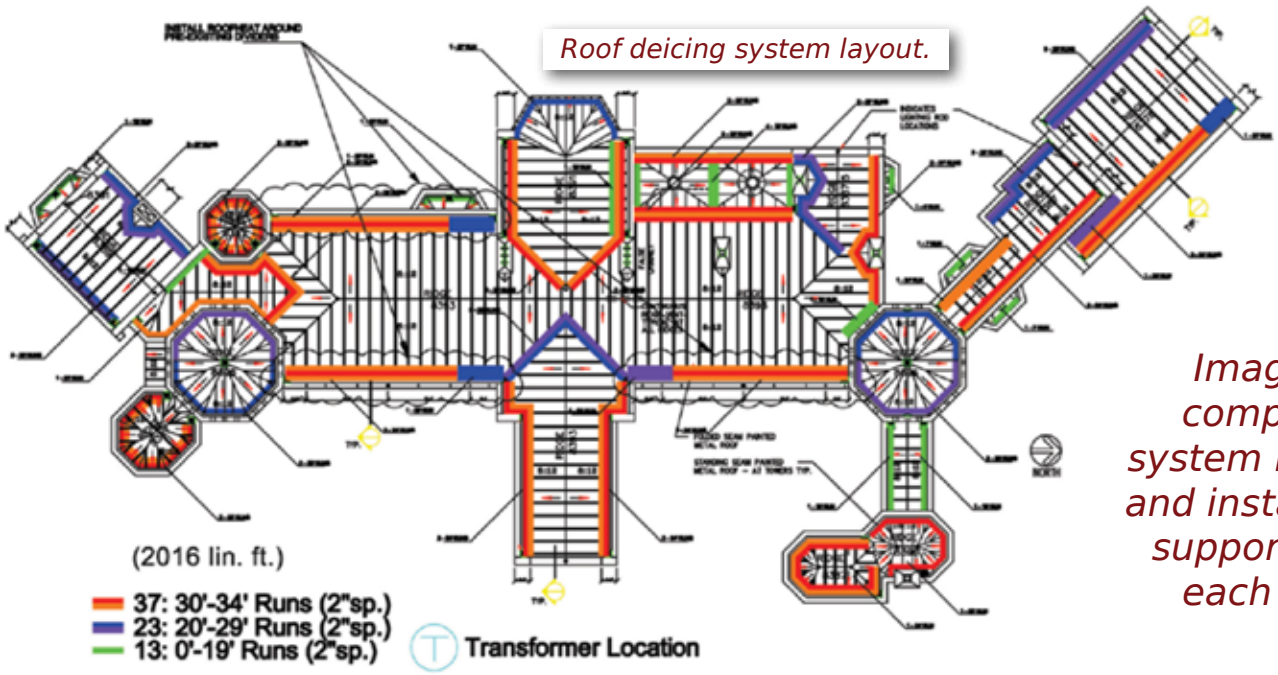
Professional Design Services

Warmzone snowmelt system layout.



Warmzone floor heating system layout.

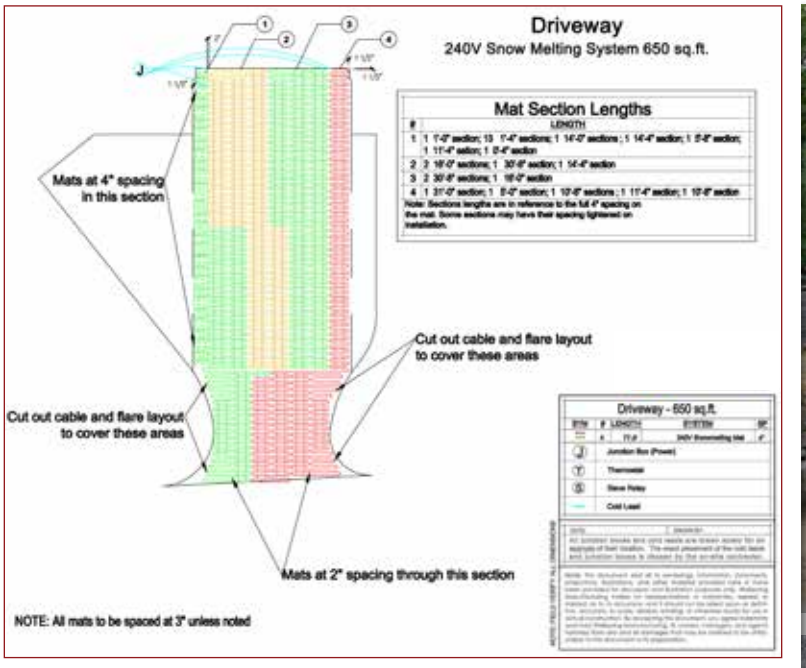
Roof deicing system layout.



Imagine complete system layouts and installation support with each job!

Heated Driveway Design and Installation

AutoCAD Design and Installation of a Heated Paver Driveway



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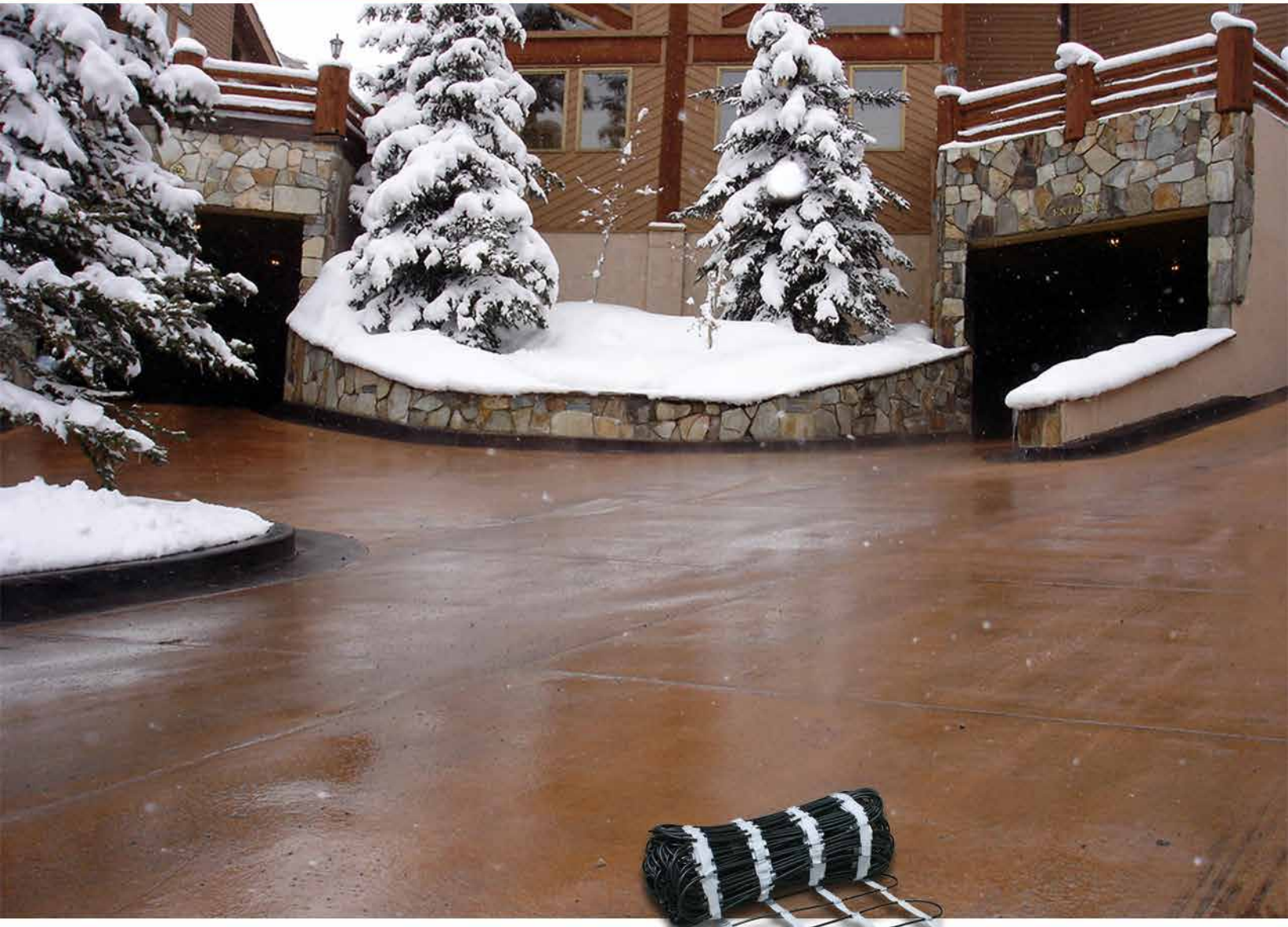
WARMZONE
PREMIER RADIANT HEATING

Snow Melting

RADIANT SNOWMELT SYSTEMS



ClearZone

Electric Snow Melting Systems

Automated Snow Melting Systems

Fully automated, maintenance-free Warmzone snow melting systems have proven to be the optimum solution for heating commercial parking ramps, driveways, sidewalks, loading docks and more. Versatile and durable, ClearZone heat cable is designed to withstand the stress of heavy concrete pours and brick and stone paver applications as well as the extreme temperatures of hot asphalt installations. The snow melting cable is available on the spool or pre-spaced in mats for easy “roll-out” installation. The performance and reliability of electric snowmelt systems have made ClearZone a favorite among homeowners and professional builders alike.

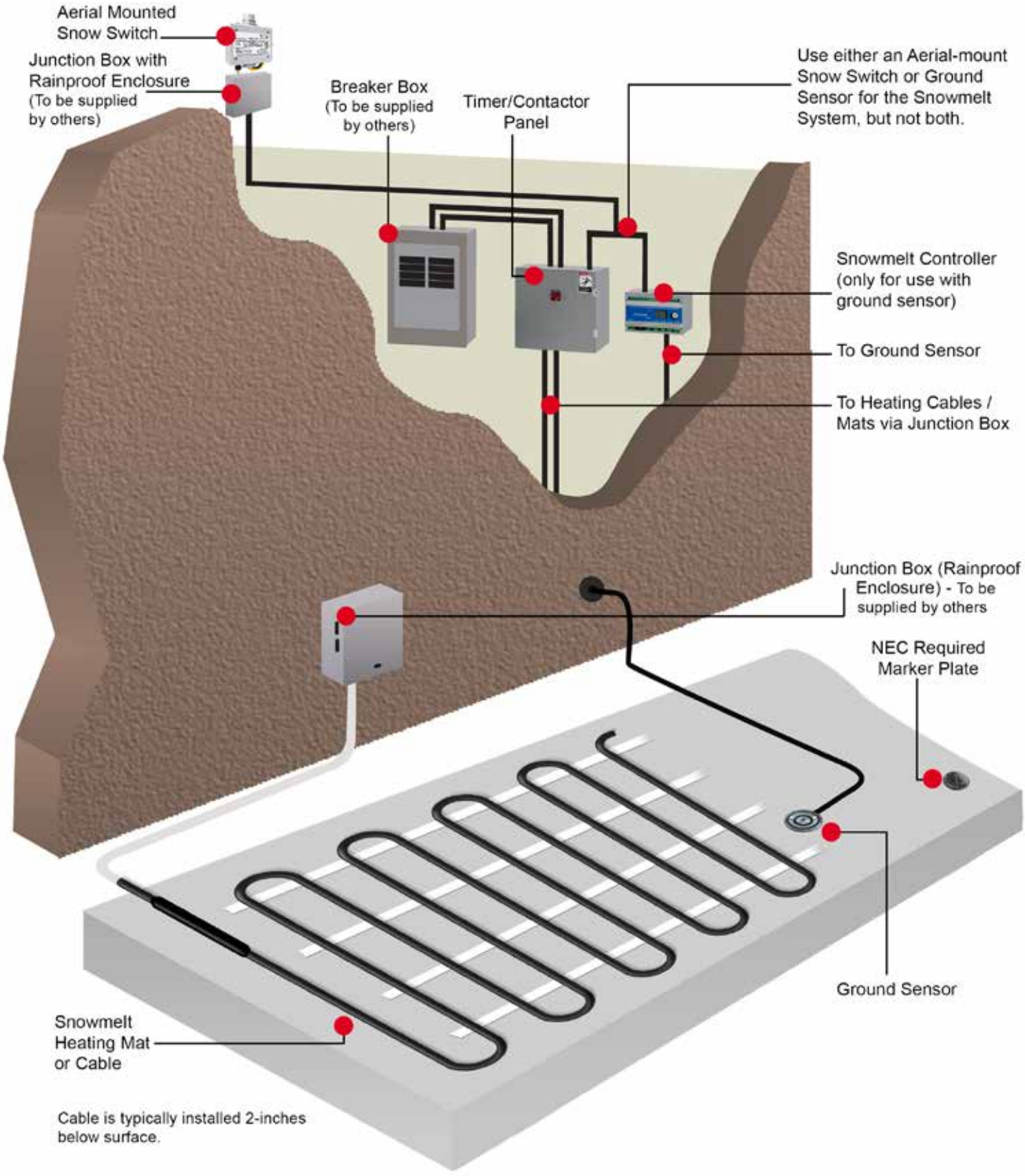
ClearZone Features Include:

- Available on the spool or pre-spaced in mats.
- Single-point connection simplifies installation.
- Twin-conductor cable.
- Flexible installation; easy to customize.
- Durable and versatile - Designed for use in concrete, under pavers, and hot asphalt applications.
- Silent, efficient and safe.
- Maintenance-free operation.
- All mats heat 2-feet wide. Power leads are 16.4 feet in length.
- 10-year limited warranty against manufacturing defects.

ClearZone Mats and Cables Specifications

Cable construction	Twin conductor
Rated voltage	208-600 V (For 277, 600 V, please call.)
Output (mats)	37W/ft.^{2} and 50W/ft.^{2}
Output (cables)	12W/ft. (40W/m) with cable, 24-70W/ft.^{2}
Cold lead	16.4 feet (5.0m) Longer cold leads available on request.
Bending radius	Minimum 2 inches, (51mm)
Cable diameter	¼ inches (7mm)
Conductor insulation	Fluoropolymer
Metal sheath	Copper
Outer sheath	Polyolefin
Max. external jacket asphalt temperature *	220°F (105°C) *[460°F (240°C) for up to 10 minutes]
Max. external jacket temp.	158°F (70°C)
Max. conductor insulation temperature	302°F (150°C) Concrete and pavers
Min. installation temp.	5°F (-15°C)

CZ Snow Melting System Overview



WARMZONE
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Exterior Radiant Heat Controls

Warmzone Offers Contactor Panels with GFEP

In keeping with its commitment to provide installers with the best products and services, Warmzone also offers GFEP (ground fault equipment protection) breakers in panels with its snow melting systems to facilitate installation and save installers time and money.

NEMA 4X contactor panel available upon request.

Features and Benefits

- NEMA 4, UL listed panel box
- Low cost
- Easy to install
- Integrated GFEP (optional)
- LED trip indicator (internal)
- LED “heat on” indicator light
- Pre-wired terminal connections
- 120 V on/off remote heat indicator
- 2-year warranty
- Single and 3-phase
- Two or four 50-amp contactors
- Two, four and eight 50-amp contactors

100-amp contactor panel without GFEP (two 50-amp contactors).

Warmzone 200-amp contactor / control panel with GFEP (four 50-amp contactors).

Contactor panel being installed.

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Exterior Radiant Heat Controls

Snowmelt System Controller

The Warmzone snowmelt control units are NEMA 1, wall-mounted control panels. The approximate size of the control unit is only 6x3½ inches. It is even possible to control the unit from an external signal (day/week timer, GSM-module or other signal source). The controller also features manual override capability, allowing you to activate the system to melt snow drifts or ice that has formed due to wind or shade.

Warmzone Control Unit for Systems Utilizing an In-ground Sensor

The Warmzone controller is designed for roof deicing and ground (heated driveways, sidewalks, etc.) snow melting applications. Using readings from temperature and moisture sensors, the controller ensures economical control of power consumption when keeping outdoor areas and roofs free of ice and snow.

Despite the compact control unit's advanced technology, superior performance and ease of use, it also represents a breakthrough in that it is significantly more affordable than most other industry controllers. The unit provides maintenance-free, energy-efficient, UL listed snow melting for all types of residential and commercial applications.

Warmzone Snowmelt Controller Technical Data

Supply voltage	120/230 V ±10%, 50-60 Hz
Temperature range	32°F to 122°F (0 to 5°C)
Working range	-4°F to 41°F (-20 to 5°C)
Built-in timer for manual snow melting / after run	1-6 hours
Output relay	3 x 16A potential free relay
Two-zone application	Output is 2 x 16A potential free relay
Water-based system	Controlling a 3 or 4 way valve, primary pump, secondary pump.
Display	Graphic and with backlight
Ambient temperature	32°F to 122°F (0°-50°C)
Housing (including cover)	IP20
Weight	1.09 lbs. (495 g)
Dimensions (excluding cover)	H: 3.5" W: 6.1" D: 1.7" (90mm x 156mm x 45mm)
Dimensions (including cover)	H: 6.7" x W: 6.4" x D: 3.6" (170mm x 162mm x 45mm)
LEDs indicate the functions: ON/green; ERROR/red	Supply voltage to the thermostat; fault indication

Technical Data for Warmzone In-Ground Sensors	
Detecting	Moisture and temperature
Mounting	Any outdoor area
Housing	IP68
Ambient temperature	-4°F to 158°F (-20 to 70°C)
Cable length	33 feet (10 meters)
Dimensions	H: 1¼-2.4 inches (32mm-60.9mm)

Ground Sensor for Temperature and Moisture

Designed for embedding into the surface of concrete, asphalt, pavers or other outdoor surfaces, Warmzone in-ground snow sensors detect ground temperature and moisture for automated snow melting systems. The activation device only signals the controller to activate the system when the outdoor temperature is below the selected setting (usually 39°F) and snow or ice occurs on the sensor head.

The snow sensor is usable for all applications within hydronic as well as electrical radiant heating. Optimal operation is ensured because of the output control, which makes the system both effective and economical.

In-ground snow sensor (and sensor cup) for automated snow melting system.

Warmzone System Activation Devices (Snow Sensors)

Warmzone snowmelt systems come standard with an aerial or ground-mounted snow sensor switch. The advanced device automatically activates the Warmzone snow melting system when it detects precipitation and temperatures are below a set point.

The WS-2C Aerial Snow Sensor - Designed for snow and freezing rain detection, the WS-2C aerial snow sensor sets the standard for automated radiant snowmelt systems. The snow sensor activates the snow melting system when moisture is present and the temperature reaches the set point (usually 39°F), providing fully automated, efficient snow and ice melting.

WS-2C Specifications	
Dimensions	4¾"x7"x2¾" (120 mm x 178 mm x 70 mm)
Weight	2 lbs. (0.9 Kg)
Operating temp	-40° to 185°F (-40° to 85°C)
Enclosure rating	NEMA 3R
Supply power	100-120 VAC / 200-240 VAC Field selectable 15 W maximum
Trigger temperature	34° to 44°F (1.1° to 6.6°C) Adjustable
Delay off (controller)	30-90 Minutes field selectable
Load capacity	30A @ 240 VAC / 100,000
Monitor contact	24 VDC/VAC 400mA 10 W Total

The WS-5C Aerial Snow Sensor - The WS-5C is essentially a WS-2C fitted with a dual 30A load control contact set. It is primarily designed for larger satellite antenna/broadcast tower deicing and pavement snow melting applications. Specifically, any job that a WS-2C can perform, a WS-5C can perform with double the load handling capability.

WS-5C Specifications	
Dimensions	4¾”x7”x2¾” (120 mm x 178 mm x 70 mm)
Weight	2 lbs. (0.9 Kg)
Operating temp	-40° to 185°F (-40° to 85°C)
Enclosure rating	NEMA 3R
Supply power	100-120 VAC / 200-240 VAC Field selectable 15 W maximum
Trigger temperature	34° to 44°F (1.1° to 6.6°C) Adjustable
Delay off (controller)	30-90 Minutes field selectable
Load capacity	2x30A @ 240 VAC / 100,000
Monitor contact	24 VDC/VAC 400mA 10 W Total

The WS-8C Aerial Snow Sensor - The WS-8C is designed for gutter, downspout, and roof ice melting and small satellite antenna deicing. The sealed, low voltage, remote mount precipitation sensor allows the user to install the small sensor head in a downspout, the bottom of a gutter, or at the end of an antenna boom, up to 10 feet away, while keeping the main controller in a more convenient or protected location.

WS-8C Specifications	
Dimensions	4¾”x7”x2¾” (120 mm x 178 mm x 70 mm)
Weight	2 lbs. (0.9 Kg)
Operating temp	-40° to 185°F (-40° to 85°C)
Enclosure rating	NEMA 3R
Supply power	100-120 VAC / 200-240 VAC Field selectable 15 W maximum
Trigger temp	34° to 44°F (1.1° to 6.6°C) Adjustable
Delay off	30-90 Minutes field selectable
Load capacity	30A @ 240 VAC / 100,000

Warmzone Snowmelt System Controls

Warmzone snowmelt systems come standard with an aerial or ground-mounted snow sensor switch. The advanced device automatically activates the Warmzone snow melting system when it detects precipitation and temperatures are below a set point. The temperature is typically set at 39°F, but is adjustable from 34°F (1.1°C) to 44°F (6.6°C). Smart system compatible, the aerial sensors have several other notable features, including adjustable delay off cycle and upgradeable remote activation.

Warmzone WS-AUX Snow Sensor Control/Display Panel

The WS-AUX control display panel is used in conjunction with a WS snow sensor controller. The sensor is typically mounted on a roof, near a gutter, or in a similarly difficult location to reach.

The control display panel brings control and monitoring of your snowmelt system indoors, providing remote monitoring and controlling of the attached sensor. The user may monitor both the operating mode and the activation state of the sensor. The user may also set the sensor to prohibit automatic operation, to automatically operate, or to manually operate one snow melting cycle, then return to automatic operation.

The WS-AUX derives its power from the snow sensor and requires no batteries or AC power. With an operating temperature range of -40°F to 185°F (-40°C to +85°C) the WS-AUX is designed for use indoors or outdoors with proper protection from the elements.

The WS-AUX is compatible with the WS-2C, WS-5C, and WS-8C rain/snow sensor controllers. The unit consists of an electronic printed circuit board mounted securely to a steel mounting plate. The WS-AUX weighs 2.5 ounces and fits into a standard single-gang or multi-gang electrical enclosure. Compatible self-threading mounting screws that fit both metal and plastic enclosures are included. The plate also has mounting holes for a rectangular “modular” cover plate. This allows the user to select a cover plate color and material that blends with the decor of the room.

The WS-AUX provides three push-button switches; STANDBY, AUTOMATIC, and MANUAL ON. The respective LED indicators for each control reflect the current operating mode of the snow sensor. To save energy, the LED indicators blink periodically rather than remaining steadily illuminated. Pressing STANDBY will set the connected snow sensor to ignore snowfall and prohibit automatic operation of an attached snowmelt system.

This function can be used to save energy if snow melting is not critical (i.e., driveway, sidewalk) and is not required for an extended period of time (vacation home, remote location). Pressing AUTOMATIC will set the connected snow sensor to automatically activate and control an attached snowmelt system when snow is detected.

WS-AUX Specifications	
Dimensions	4.1”x 1.8”x 0.9” (104 mm x 45 mm x 23 mm)
Weight	2.5 ounces
Operating temp	-40° to 185°F (-40° to 85°C)
Enclosure	Fits into a standard single-gang or multi-gang electrical enclosure
Supply power	Derives its power from the snow sensor, requiring no batteries or AC power
Push-button functions	STANDBY, AUTOMATIC, and MANUAL ON

Example of a Warmzone aerial-mount snow sensor and junction box.

To connect the snow sensor and the WS-AUX, an appropriate 5-conductor cable is required. Warmzone provides the recommended interconnect cable, which is shielded, stranded, tinned, with 22 AWG (0.5 mm^2). The individual leads of the interconnect cable are installed into the rear terminal block of the WS-AUX (see image above) and the cable is then connected to the snow sensor. When using Warmzone’s shielded interconnect cable, the WS-AUX can be installed as much as 500 feet away from the snow sensor. (Available in 50-, 100- and 200-foot lengths.)

Warmzone Snow Melting Mats & Cable Ordering Information *

The Warmzone snow melting system includes heating cable or a mat that is pre-spaced and taped into a 3- or 4-inch on-center-mat that allows for simple roll-out installation. All mats heat 2-feet wide. Power leads are 16.4 feet in length. (* *The most commonly ordered snow melting cable sizes are listed below. To order 120, 208, 277, 600 V, and other size mats and cables, please contact Warmzone at 888.488.9276.*)

ClearZone

Snow Melting Mats

208 Volt Mat (50 W per square foot)

Item Number	Heated Area (Sq. ft.)	Mat Length (Feet)	Watts	Amps	Ohms
SM85052500	10	5	500	2.4	86.5
SM8501121000	20	11	1,000	4.8	43.3
SM8501621500	30	16	1,500	7.2	28.8
SM8502222000	40	22	2,000	9.6	21.6
SM8502722500	50	27	2,500	12.0	17.3
SM8503323000	60	33	3,000	14.4	14.4
SM8503823500	70	38	3,500	16.8	12.4
SM8504424000	80	44	4,000	19.2	10.8
SM8504924500	90	49	4,500	21.6	9.6
SM8505525000	100	55	5,000	24.0	8.7
SM8506025500	110	60	5,500	26.4	7.9
SM8506526000	120	65	6,000	28.8	7.2

240 Volt Mat (50 W per square foot)

Item Number	Heated Area (Sq. ft.)	Mat Length (Feet)	Watts	Amps	Ohms
SM25052500	10	5	500	2.1	114.3
SM2501121000	20	11	1,000	4.2	57.1
SM2502722500	50	27	2,500	10.4	23.1
SM2504424000	80	44	4,000	16.7	14.4
SM2506025500	110	60	5,500	22.9	10.5

480 Volt Mat (50 W per square foot)

Item Number	Heated Area (Sq. ft.)	Mat Length (Feet)	Watts	Amps	Ohms
SM45052500	10	5	500	1.0	460.8
SM4501121000	20	11	1,000	2.1	230.4
SM4502722500	50	27	2,500	5.2	92.2
SM4504424000	80	44	4,000	8.3	57.6
SM4506025500	110	60	5,500	11.5	41.9

208 Volt Mat (37 W per square foot)

Item Number	Heated Area (Sq. ft.)	Mat Length (Feet)	Watts	Amps	Ohms
SM837112750	20	11	750	3.6	57.7
SM2373022000	55	30	2,000	9.6	21.6
SM2375123500	95	51	3,500	16.8	12.4
SM2376524500	120	65	4,500	21.6	9.6
SM2378025500	146	80	5,500	26.4	7.9
SM8378726000	160	87	6,000	28.8	7.2

240 Volt Mat (37 W per square foot)

Item Number	Heated Area (Sq. ft.)	Mat Length (Feet)	Watts	Amps	Ohms
SM237112750	20	11	750	3.1	77.4
SM2373022000	55	30	2,000	8.3	28.9
SM2375123500	95	51	3,500	14.6	16.4
SM2376524500	120	65	4,500	18.8	12.8
SM2378025500	150	80	5,500	22.9	10.5

Snow Melting Mats for Asphalt

240 Volt (37 W per square foot)

Item Number	Heated Area (Sq. ft.)	Mat Length (Feet)	Watts	Amps	Ohms
SMA237112750	20	11	750	3.1	77.4
SMA2373022000	55	30	2,000	8.3	28.9
SMA2375123500	95	51	3,500	14.6	16.4
SMA2376524500	120	65	4,500	18.8	12.8
SMA2378025500	150	80	5,500	22.9	10.5

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WARMZONE SNOW MELTING MATS & CABLE ORDERING INFORMATION *

Snow Melting Cable

240 Volt Cable (37 & 50 W per square foot)

Item Number	Cable Length (Feet)	Approximate Heat Coverage (Square feet)		Watts	Amps	Ohms
		3-inch spacing (50 Watts Sq. ft.)	4-inch spacing (37 Watts Sq. ft.)			
SC262750	62	15	20	750	3.1	77.4
SC2841000	84	20	27	1,000	4.2	57.1
SC21682000	168	40	55	2,000	8.3	28.9
SC22092500	209	50	70	2,500	10.4	23.1
SC22933500	293	70	95	3,500	14.6	16.4
SC23754500	375	90	125	4,500	18.8	12.8
SC24585500	458	110	150	5,500	22.9	10.5

480 Volt Cable (37 & 50 W per square foot)

Item Number	Cable Length (Feet)	Approximate Heat Coverage (Square feet)		Watts	Amps	Ohms
		3-inch spacing (50 Watts Sq. ft.)	4-inch spacing (37 Watts Sq. ft.)			
SC443500	43	10	14	500	1.0	460.8
SC41271500	127	30	42	1,500	3.1	153.6
SC41702000	170	40	57	2,000	4.2	115.2
SC42563000	256	60	85	3,000	6.3	76.8
SC43404000	340	80	113	4,000	8.3	57.6
SC44265000	426	100	142	5,000	10.4	46.8
SC44695500	469	110	156	5,500	11.5	41.9

208 Volt Cable (37 & 50 W per square foot)

Item Number	Cable Length (Feet)	Approximate Heat Coverage (Square feet)		Watts (12W/ ft.)	Amps	Ohms
		3-inch spacing (50 Watts Sq. ft.)	4-inch spacing (37 Watts Sq. ft.)			
SC843500	43	10	14	500	2.4	86.5
SC8861000	86	20	29	1,000	4.8	43.3
SC81271500	127	30	42	1,500	7.2	28.8
SC81702000	170	40	57	2,000	9.6	21.6
SC82132500	213	50	71	2,500	12.0	17.3
SC82563000	256	60	85	3,000	14.4	14.4
SC82993500	299	70	100	3,500	16.8	12.4
SC83404000	340	80	113	4,000	19.2	10.8
SC83834500	383	90	128	4,500	21.6	9.6
SC84265000	426	100	142	5,000	24.0	8.7
SC84695500	469	110	156	5,500	26.4	7.9
SC85126000	512	120	171	6,000	28.8	7.2

Mesh-Up Support Chairs

Mesh-Up plastic supports are used to keep remesh and heat cable off the ground before and during concrete pouring. The support snaps easily and firmly to remesh where the wires intersect; preventing it from rotating, shifting or becoming displaced. The Mesh-Up “flexes” during concrete pours before gradually restoring to its original shape. This reduces the stress placed on the wire mesh and helps prevent it from bending or being damaged, helping to ensure top-quality concrete work.

Fully Automated Snow Melting Systems

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PREMIER RADIANT HEATING

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Toll free: 888.488.9276

WARMZONE
PREMIER RADIANT HEATING

Roof Deicing

SELF-REGULATING HEAT TRACE CABLE AND LOW-VOLTAGE ELEMENT

Self-Regulating Heat Cable Comparison

Warmzone self-regulating heat cable features a more flexible outer jacket and more durable carbon core than other leading brands of self-reg cable. These features provide more consistent performance, longer lifespan, and easier installation in cold temperatures.

Key Features of Warmzone Self-regulating Heat Cable vs. Other Cable Brands

Outer Jacket Quality

Typical self-regulating heat cable

The outer jacket of typical self-reg cable tends to "bubble" or separate from the cable core when the cable is manipulated for turns. These irregularities create stress points on the cable that can result in water reaching the core, leading to erratic heating and eventual cable failure.

Other Leading Brands of Self-regulating Cable

The outer jacket of most self-regulating heat cable separates from the core at a typical bend radius of 2 inches.

Warmzone Self-regulating Heat Cable

Warmzone self-regulating heat cable does not "bubble" at an even tighter bend radius of 1½ inches.

Warmzone Self-regulating Heat Cable

Warmzone self-regulating heat cable features a higher quality outer jacket that does not "bubble". This reduces the chances of water seepage and cable failure.

Installation at Low Temperatures

Typical Self-regulating Heat Cable

Typical self-regulating cable has a minimum installation temperature of 32-40°F. This is because the carbon in the cable becomes brittle and can easily break when bent or manipulated at low temperatures.

The outer jacket also becomes stiff, making the securing of cable to the roof, gutter, or pipes difficult during cold weather installations. The outer jacket tends to "pucker" and pull away from the core when making bends, compromising the cable's integrity and leading to cable failure. Therefore installing most self-regulating heat cable at temperatures below 40°F is not recommended.

Warmzone self-regulating heat cable and plug with GFCI.

Warmzone Self-regulating Heat Cable

Warmzone self-regulating cable features a higher quality carbon center that is more resilient in low temperatures, thereby allowing the cable to be safely installed at temperatures as low as 0°F.

The higher quality outer jacket also remains flexible at low temperatures, resulting in more reliable performance and easier installation when securing to roofs, gutters, and pipes.

"In all the years I've been installing roof heating systems, I've noticed that "bubbles" in the outer jacket of the cable almost always result in a point of failure. The superior outer jacket of Warmzone's self-reg cable helps to eliminate this problem."

– Eric W., Roofing Contractor

Self-Regulating Heat Cable System Overview

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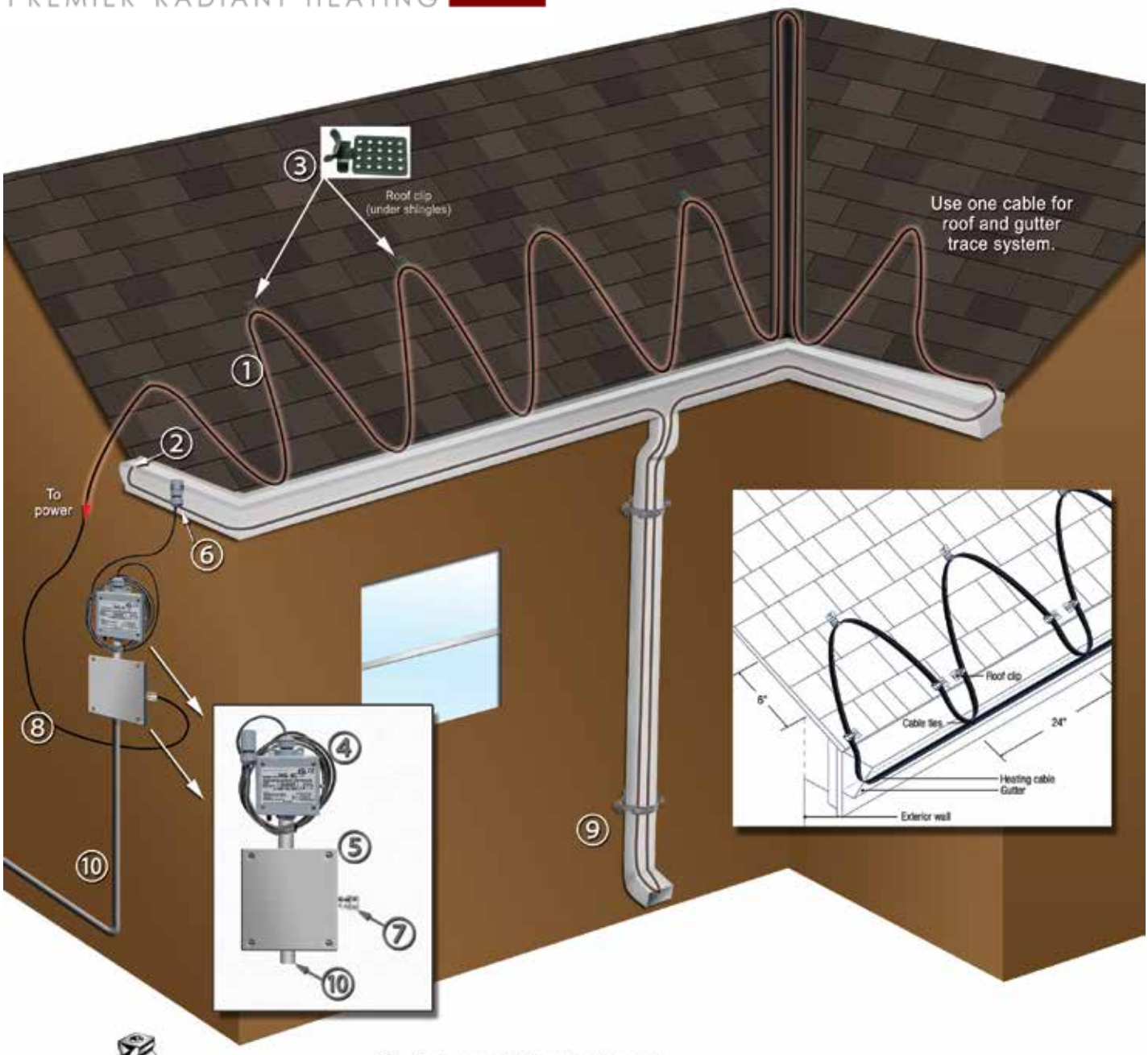


Minerallac clamp used to secure remote sensor to gutter (#6).

① Self-regulating heat cable
② End seal (termination) kit
③ Roof cable clips, manufactured for superior performance (under shingles)
④ Snow sensor or thermostat (WS-8 sensor with inline sensor shown)
⑤ Mulberry or Bell weatherproof junction box
⑥ Remote sensor (secured with Minerallac clamp)
⑦ Power connection kit
⑧ Drip loop (prevents water from trailing into the junction box)
⑨ Double or single downspout hanger
⑩ Conduit to home

RoofHeat

Self-Regulating Heat Cable

Self-regulating Roof Heat and Gutter Trace Cable

Most roof deicing applications are best served by using Warmzone's self-regulating heat cable. The heat cable can be installed in gutters and downspouts to keep structures safe from ice damage and frost erosion.

The self-regulating heat cable features an irradiated conductive core that increases its heat output as the ambient temperature falls, and decreases its output when the temperature rises.

Features and Benefits

- Will not overheat or burnout when overlapped
- Superior quality outer jacket and carbon core
- Features advanced technology that results in highly effective, energy efficient operation
- Can be cut to length in the field
- Fully automated
- Maintenance free
- Protects roofs by preventing ice dams and ice buildup

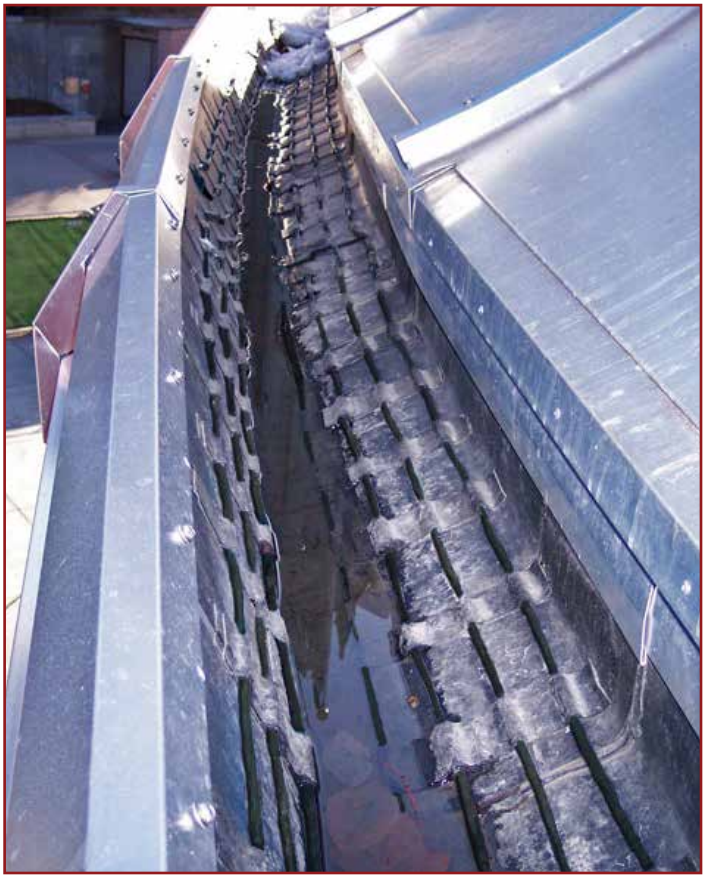
Several roof heating options are available. Warmzone roof and gutter deicing systems are compatible with the following standard materials:

Roof Materials:

- Shake / Shingle
- Rubber / Tar
- Wood / Metal

Gutter/Downspout:

- Metal
- Plastic
- Wood



Self-regulating heat trace cable installed in the gutters of a large commercial facility.

Heated roof valley and edges.

Warmzone pre-terminated self-regulating heat cable with and without a ground fault circuit interupter (GFCI).

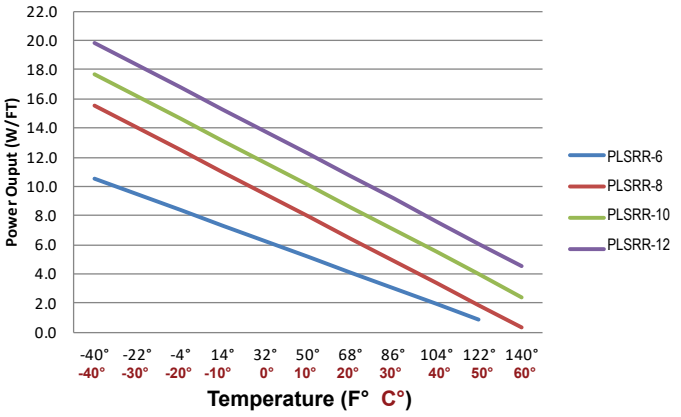
PLSRR Heat Trace Cable Data Sheet

PLSRR is self-regulating heat cable that can be used for roof / gutter heating and pipe tracing applications. The cable features a flexible, UV stabilized thermoplastic elastomer overjacket that protects the durable carbon core for wet applications and exposure to the sun. The parallel heating cable is designed for a variety of industrial applications and environments, including explosion-hazardous and nonhazardous areas, and can be used for plastic or metal pipe freeze protection and temperature maintenance of pipes, tanks, and valves. The cable includes a NON-PRORATED 10-year warranty.

Technical Data for PLSRR Heat Cable	
Service voltage	110-120V, 220-277V
Maximum maintain or continuous exposure temperature (power on)	+149°F (65°C)
Maximum intermittent exposure temperature 1000 hours (power on/off)	+185°F (85°C)
Minimum installation temperature	-40°F (-40°C)
Protective braid resistance	<.006Ω/ft.
Bus wire gauge	16AWG
Approvals	cULus, hazardous, CSA, ATEX, IECEx
Warranty	10 years (Not prorated)
Certifications	Class I, Div.2 Groups A, B, C, D Class II, Div.2 Groups E, F, G Class III

Power Output Curves

Watts per Foot vs. Temperature

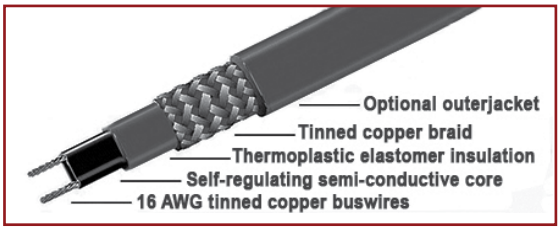


PLSRR Cable Dimensions

Type	Dimensions	Minimum Bend Radius
PLSR-CR	12.6 x 6.0mm	1.4 inches (36mm)

Maximum Length (feet) vs Circuit Breaker Size

Cable	Startup Temp.	120 V				240 V			
Breaker Size		15A	20A	30A	40A	15A	20A	30A	40A
PLSRR-6-1 and PLSRR-6-2	50°F (+10°C)	230	270	270	270	460	540	540	540
	32°F (0°C)	230	270	270	270	460	540	540	540
	14°F (-10°C)	180	210	270	270	360	420	540	540
	0°F (-18°C)	140	190	270	270	285	380	540	540
	-20°F (-29°C)	125	165	250	270	250	330	500	540
	-40°F (-40°C)	110	145	220	270	220	295	440	540
PLSRR-8-1 and PLSRR-8-2	50°F (+10°C)	150	200	210	210	300	400	420	420
	32°F (0°C)	150	200	210	210	300	400	420	420
	14°F (-10°C)	140	150	205	210	280	300	410	420
	0°F (-18°C)	100	130	200	210	200	265	400	420
	-20°F (-29°C)	85	115	175	210	175	235	350	420
	-40°F (-40°C)	80	105	155	210	155	210	315	420
PLSRR-10-1 and PLSRR-10-2	50°F (+10°C)	120	160	180	180	240	315	360	360
	32°F (0°C)	105	140	170	180	210	280	340	360
	14°F (-10°C)	95	125	165	180	190	250	330	360
	0°F (-18°C)	80	110	160	180	160	215	325	360
	-20°F (-29°C)	70	95	140	180	145	190	285	360
	-40°F (-40°C)	60	85	125	170	125	170	255	340
PLSRR-12-1 and PLSRR-12-2	50°F (+10°C)	80	140	150	150	160	270	310	310
	32°F (0°C)	75	130	145	150	150	260	290	310
	14°F (-10°C)	70	115	142	150	140	230	285	310
	0°F (-18°C)	60	80	140	150	120	160	280	310
	-20°F (-29°C)	50	65	110	150	105	140	225	310
	-40°F (-40°C)	45	60	90	140	90	125	190	280



Ordering Information

PLSRR- ☐ - ☐ - ☐ (PLSRR-8-2-CR)

Outer jacket
CR=Thermoplastic

Supply Voltage
1=110-120VAC;
2=208-277VAC

Output Power (at 40°F)

Example: PLSRR-8-2-CR = 8 watt, 208-277V, Thermoplastic outer jacket

Approvals:

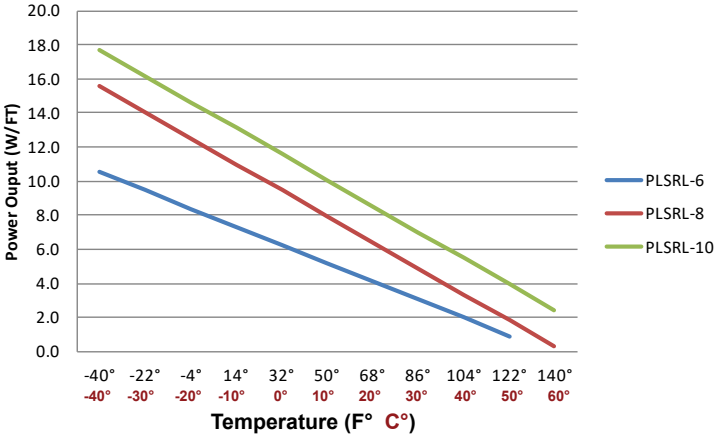
PLSRL Heat Trace Cable Data Sheet

Warmzone's PLSRL self-regulating heat cable is the cable of choice for roof heating and gutter trace applications. The UL listed cable features a flexible outer jacket and durable carbon core, providing consistent performance, long lifespan, and easy installation in cold temperatures.

Technical Data for PLSRL Heat Cable	
Service voltage	110-120V, 220-277V
Maximum maintain or continuous exposure temperature (power on)	+149°F (65°C)
Maximum intermittent exposure temperature 1000 hours (power on/off)	+185°F (85°C)
Minimum installation temperature	-40°F (-40°C)
Protective braid resistance	<.006Ω/ft.
Bus wire gauge	16AWG
Approvals	cULus; CE, ATEX, IECEx, EAC
Warranty	2 years (Not prorated)

Power Output Curves

Watts per Foot vs. Temperature



Maximum Length (feet) vs Circuit Breaker Size

Cable	Startup Temp.	120 V				240 V			
Breaker Size		15A	20A	30A	40A	15A	20A	30A	40A
PLSRL-6-1 and PLSRL-6-2	50°F (+10°C)	230	270	270	270	460	540	540	540
	32°F (0°C)	230	270	270	270	460	540	540	540
	14°F (-10°C)	180	210	270	270	360	420	540	540
	0°F (-18°C)	140	190	270	270	285	380	540	540
	-20°F (-29°C)	125	165	250	270	250	330	500	540
	-40°F (-40°C)	110	145	220	270	220	295	440	540
PLSRL-8-1 and PLSRL-8-2	50°F (+10°C)	150	200	210	210	300	400	420	420
	32°F (0°C)	150	200	210	210	300	400	420	420
	14°F (-10°C)	140	150	205	210	280	300	410	420
	0°F (-18°C)	100	130	200	210	200	265	400	420
	-20°F (-29°C)	85	115	175	210	175	235	350	420
	-40°F (-40°C)	80	105	155	210	155	210	315	420
PLSRL-10-1 and PLSRL-10-2	50°F (+10°C)	120	160	180	180	240	315	360	360
	32°F (0°C)	105	140	170	180	210	280	340	360
	14°F (-10°C)	95	125	165	180	190	250	330	360
	0°F (-18°C)	80	110	160	180	160	215	325	360
	-20°F (-29°C)	70	95	140	180	145	190	285	360
	-40°F (-40°C)	60	85	125	170	125	170	255	340

PLSRL Cable Dimensions

Type	Dimensions	Minimum Bend Radius
PLSRL-CR	10.9 x 6.0 mm	1.4 inches (36 mm)

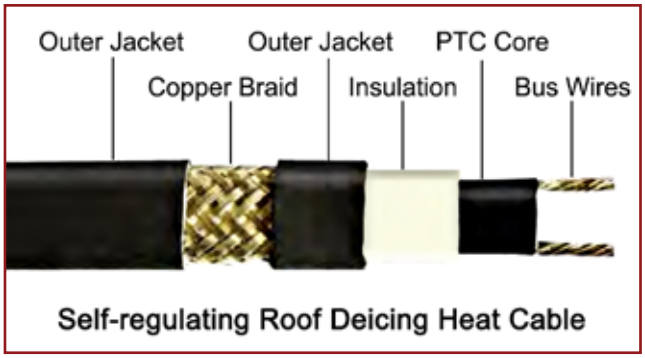
Approvals:

Ordering Information

PLSRL- ☐ - ☐ - ☐ For example: PLSRL-6-2-CR

- **Outer jacket** CR=Thermoplastic
- **Supply Voltage** 1=110-120VAC; 2=208-277VAC
- **Output Power** (at 40°F)

Example: PLSRL-6-2-CR = 6 watt, 208-277V, Thermoplastic outer jacket



Self-regulating Roof Deicing Heat Cable

Warmzone self-regulating heat cable.

Roof Heating

Cable Accessories and Connections

PLSR12 - End seal kit

A Heat shrinkable tubes (2) **B** Woven braids (2)
C Heat shrink end caps (2)

VHBPad - Pad for metal roof

A Double-sided 3x2-inch VHB Pad for metal roofs - (25 per package)

PLSR14 - Roof clips

A Roof clips - 50 per bag

PLSR15 - Downspout hanger kit

A Hanger bracket
B Clamp ties

PLSR10 - Splice / tee kit - with single end seal kit

A Clamp tie
B Mastic strips (1½" long x 1" wide)
C Heat-shrinkable tube (8" long x 1" diameter)
D Heat-shrinkable tube (1" long x ⅛" diameter)
E Heat-shrinkable tube (1" long x ½" diameter)
F Uninsulated braid crimp
G Cable ties
H Insulated bus wire crimps
I Black cloth tape (6" long)
J Heat-shrinkable cap
K Heat-shrinkable tube for ground

PLSR00 - Power connection kit - with single end seal kit

A Black-shrinkable tube (2) (5½" long x ⅛" diameter)
B Green-shrinkable tube (6" long x ¼" diameter)
C Black heat-shrinkable tube (1" long x ½" diameter)
D Seal fitting and black grommet
E Mounting bracket for piping
F Gasket
G Lock nut
H Grommet
I Wire nuts (3)
J Labels (4)

PLSR Cable Accessories and Controls

Item Number	Description
PLSR00-Power	Power connection kit
PLSR08	Plug-in cord set, 120 V GFCI, 100 ft. maximum run length
PLSR10	Splice / tee kit
PLSR12	End seal kit (2 end seals)
PLSR14	Roof clips - 50/bag
VHBPad	3"x2" pad - 25/pack
PLSR15	Downspout hanger kit
WS-115	Air sensing NEMA 4X outdoor thermostat 120/240 V
WS-115R	Surface sensing NEMA 4X outdoor thermostat
WS-8C	Aerial mounted snow switch with remote moisture sensor (30 amps; 120-277 V)
WS-IET	Industrial electronic temperature controller

Commercial offices with the low-voltage roof heating system installed to heat the roof valleys and along the roof edges.

Self-Regulating Heat Cable Specs

Technical Data

Service voltage	110-120, 208-277 V
Maximum maintain or continuous exposure temperature (power on)	149°F (65°C)
Maximum intermittent exposure temperature 1,000 hours (power on or off)	-40° to 185°F (-40° to 85°C)
Minimum installation temperature	-40°F (-40°C)
Protective braid resistance	< 18.2Ω/km
Bus wire gauge	16 AWG
Approvals	CSA; ordinary and hazardous
Certifications	Class I, Div.2 Groups A,B,C,D Class II, Div.2 Groups E,F,G Class III

For information about Warmzone roof heating cable accessories, refer to the information on page 25.

For additional information, please contact a Warmzone representative at 888.488.9276.

PLSR Cable Accessories and Controls

Item Number	Description
PLSR00-Roof	Power connection kit
PLSR03-Aluminum	Aluminum application tape
PLSR03-Fiberglass	Fiberglass application tape
PLSR08	Plug-in cord set, 120 V GFCI, 125 ft. maximum run length
PLSR10	Splice / tee kit
PLSR12	End seal kit
PLSR-JHE-L	End seal with light (can be used at beginning or end)
PLSR13	Roof clips - 10/bag
PLSR14	Roof clips - 50/bag
PLSR15	Downspout hanger kit
TF-115	Air sensing NEMA 4 outdoor thermostat 120/240 V
TRF-115	Surface sensing NEMA 4 outdoor thermostat
WS-8C	Aerial mounted snow switch with remote moisture sensor (30 amps; 120-277 V)

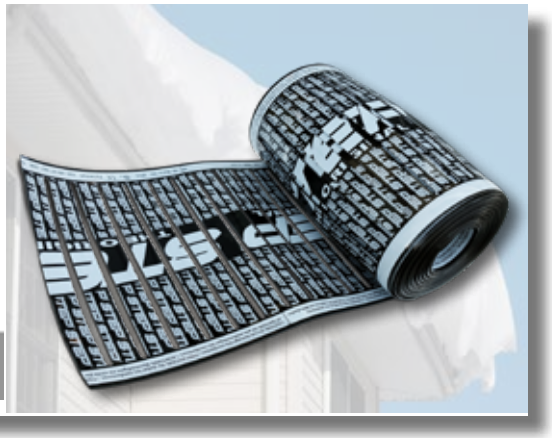
Warmzone Roof Heating Cable Ordering Information

Pre-Terminated Self-Regulating Cable (Pipe, Roof and Gutter)

Item Code	Description	Length (feet)	Output @ 50°F	Voltage
PLSR-120-50	Pre-terminated self-regulating heat cable	50	6W/ft.	120
PLSRT-120-75	Pre-terminated self-regulating heat cable	75	6W/ft.	120
PLSRT-120-100	Pre-terminated self-regulating heat cable	100	6W/ft.	120
PLSRT-120-50 GF	Pre-terminated self-regulating heat cable with ground fault protection	50	6W/ft.	120
PLSRT-120-75 GF	Pre-terminated self-regulating heat cable with ground fault protection	75	6W/ft.	120
PLSRT-120-100 GF	Pre-terminated self-regulating heat cable with ground fault protection	100	6W/ft.	120
Self-Regulating Cable (Pipe, Roof and Gutter)				
PLSR-120-5	Self-regulating heat cable	250’/500’/1000 ft.	5W/ft.	120
PLSR-120-8	Self-regulating heat cable	250’/500’/1000 ft.	8W/ft.	120
PLSR-120-10	Self-regulating heat cable	250’/500’/1000 ft.	10W/ft.	120
PLSR-120-12	Self-regulating heat cable	250’/500’/1000 ft.	12W/ft.	120
PLSR-240-5	Self-regulating heat cable	250’/500’/1000 ft.	5W/ft.	208-277
PLSR-240-8	Self-regulating heat cable	250’/500’/1000 ft.	8W/ft.	208-277
PLSR-240-10	Self-regulating heat cable	250’/500’/1000 ft.	10W/ft.	208-277
PLSR-240-12	Self-regulating heat cable	250’/500’/1000 ft.	12W/ft.	208-277
*Cut fee	*Cut fee for non 250/500/1000-foot rolls			

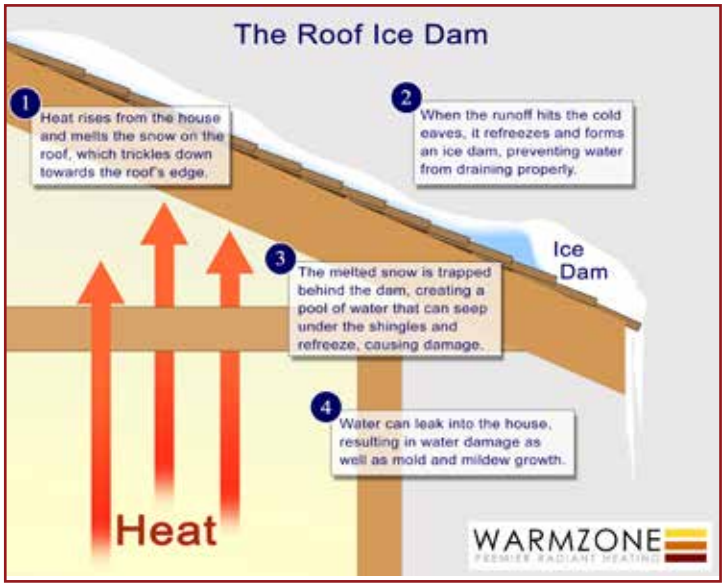
RoofHeat

STEP Low-voltage Roof Deicing Systems



Low-Voltage Roof Deicing System

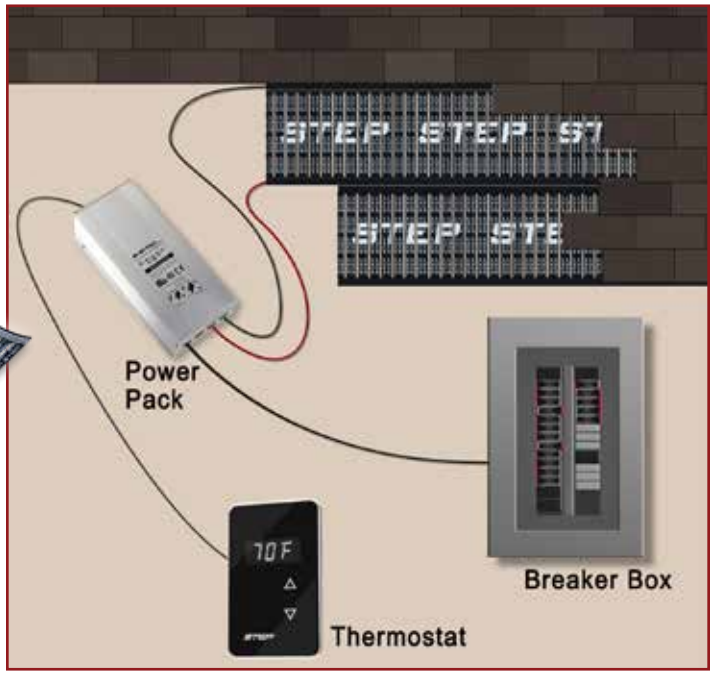
Warmzone's innovative low-voltage roof deicing systems feature a unique, self-regulating, semi-conductive polymer heating element that is very thin and can be cut on site and discreetly nailed or stapled under shingles for quick, easy installation. The advanced heating element is polypropylene fused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



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

Low-voltage Roof Deicing System

Automated Roof Deicing System

How it Works

Warmzone's roof deicing 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 deicing 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 deicing 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 deicing system installed at the roof edges.

RoofHeat STEP Roof Deicing 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 a variety of roofing materials, including shingles and metal.

The fully automated maintenance-free roof deicing system is one of the most advanced and efficient roof deicing 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 deicing 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

Warmzone RoofHeat STEP Ordering Information

RoofHeat
STEP Low-voltage Roof Deicing Systems

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Intertek

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.

WARMZONE
PREMIER RADIANT HEATING

Roof and Gutter Trace Controls

Self-regulating Heat Trace Cable

Warmzone Radiant roof deicing systems are custom designed to best serve the needs of each specific installation. In addition to the custom heating cable layout, users also have activation device/controller options for operating the system.

WS-8C Aerial Mount Sensor - The WS-8C activation device is designed for gutter, downspout, and roof ice melting and small satellite antenna deicing. The totally sealed, low voltage, remote-mount precipitation sensor allows the user to install the small sensor head in a downspout, the back of a gutter, or at the end of an antenna boom, up to 10 feet away from the unit so that the main controller can be installed in a more convenient outdoor location.

The unit is housed in a two gang PVC enclosure. The overall dimensions of the WS-8C are 4¾" (120 mm) x 7" (178 mm) x 2¾" (70 mm). The unit weighs 2 pounds. The user may access all electronics by removing the four front cover screws.

TF-115 Outdoor Ambient Sensing Thermostat - The TF-115 ambient sensing thermostat is designed to sample temperature changes in the air. The TF-115 can be used in a wide range of heating applications and can serve as a high limit backup for "sensitive" applications. The NEMA 4X rain-tight enclosure provides adequate protection in most environments. The TF-115 thermostat has a temperature range of 40°F to 110°F and can handle up to 22 amps at 277 VAC.

TRF-115 Outdoor Surface Sensing Thermostat - The TRF-115 surface sensing thermostat samples temperature changes in the surface. The sensor is typically used as a line sensing control for pipes, vessels and other types of electric heat tracing applications. Suitable for use in agricultural, industrial and commercial environments. The NEMA 4X rain-tight enclosure provides adequate protection in most environments.

TF-115 and TRF-115 Features

- Rugged weather resistant enclosure made of corrosion resistant materials for long life.
- Stainless steel remote bulb provides rapid response to temperature change.
- Low mass, high surface area of stainless steel coiled sensor provides rapid response to temperature change.
- Large, readily visible dial with 0°F - 120°F temperature range.
- Multi-positional mounting offers flexibility in either new or existing installations.
- One control for both heating and cooling applications.
- Complies with NEC 547 and NEMA 4X requirements.

TRF-115 Outdoor Surface Sensing Thermostat - The IET is a microprocessor-based temperature controller designed to provide on/off control for commercial heating, cooling, air conditioning and refrigeration applications. Its comprehensive functionality makes the IET is one of the most versatile temperature controls available.

The IET features a lockable front-panel touchpad and a Liquid Crystal Display (LCD) for viewing the temperature and status of other functions. The digital display and keypad allow precise temperature settings.

When not in the programming mode, the display provides a constant readout of the sensor temperature. Annunciators on the liquid crystal display indicate when the relay is energized. The IET is also equipped with diagnostic programs that check for hardware, software or system problems and display different error codes to indicate the problem and its location.

Roof Deicing Solutions

Resort hotel with low-voltage roof deicing system being installed.

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WARMZONE
PREMIER RADIANT HEATING

Pipe Trace Solutions

SELF-REGULATING HEAT TRACE CABLE

WARMZONE
PREMIER RADIANT HEATING

Self-regulating Pipe Trace Cable

Pipe Trace Solutions

Self-regulating Heat Trace Cable

Warmzone's self-regulating pipe tracing cable is an ideal solution for industrial, commercial and residential pipe freeze protection as well as process temperature maintenance. The durable heat cable can be installed in industrial, commercial and residential pipe trace applications.

In addition to pipe freeze protection, Warmzone self-regulating pipe trace systems can also be used for process temperature maintenance applications where viscosity control at higher temperatures is required. Warmzone offers a range of pipe trace cable that can be used in a variety of industrial hazardous, non-hazardous and commercial applications. Heat tracing can be used in commercial, residential, and industrial applications with both metal and plastic piping.

Warmzone self-regulating heat cable is available for a wide range of commercial, industrial and residential pipe trace applications. The cable can be used for pipe freeze prevention as well as process temperature maintenance.

Industrial pipe tracing application.

The pre-terminated 120 V self-regulating heat cable is available in 50, 75, and 100-foot lengths. The pre-assembled 'plug and play' kits come with the option of a 6-foot standard or GFCI power plug.

The self-regulating cable adjusts heat output in response to ambient temperatures, so when the temperature rises, the electrical resistance increases and the consumption of electricity decreases, ensuring safe, energy-efficient operation. The cable will not overheat or burnout - even when touching or overlapping.

Also, because of the self-regulating properties, a thermostat may not be necessary in some applications. Warmzone heat cable is resistant to watery and inorganic chemicals and protected against abrasion and impact damage.

The termination, power connection, splice, tee, and end seal kit reduces installation time and requires no special skills or tools.

PLSRR Heat Trace Cable Data Sheet

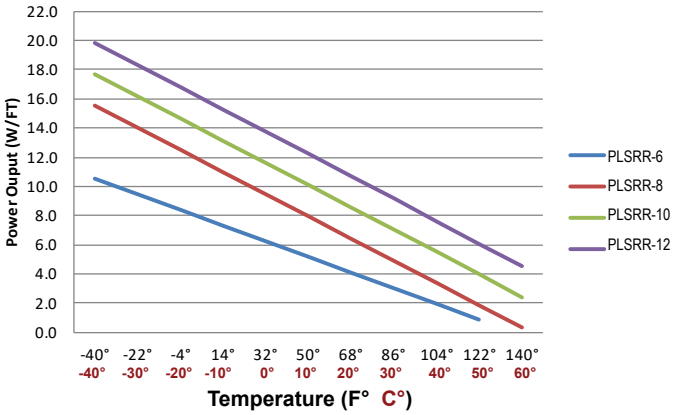
PLSRR self-regulating heat cable is the cable of choice for standard pipe trace applications. The cable features a flexible, UV-stabilized thermoplastic elastomer overjacket that protects the carbon core for wet applications and exposure to the sun. The parallel heating cable is designed for a variety of industrial applications and environments, including explosion hazardous and nonhazardous areas, and can be used for plastic or metal pipe freeze protection and temperature maintenance.

(PLSRR heat trace cable features a NON-PRORATED 10-year warranty.)

Technical Data for PLSRR Heat Cable	
Service voltage	110-120V, 220-277V
Maximum maintain or continuous exposure temperature (power on)	+149°F (65°C)
Maximum intermittent exposure temperature 1000 hours (power on/off)	+185°F (85°C)
Minimum installation temperature	-40°F (-40°C)
Protective braid resistance	<.006Ω/ft.
Bus wire gauge	16AWG
Approvals	cULus, hazardous, CSA, ATEX, IECEx
Warranty	10 years (Not prorated)
Certifications	Class I, Div.2 Groups A, B, C, D Class II, Div.2 Groups E, F, G Class III

Power Output Curves

Watts per Foot vs. Temperature

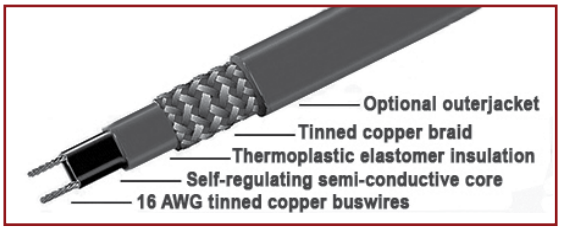


PLSRR Cable Dimensions

Type	Dimensions	Minimum Bend Radius
PLSR-CR	12.6 x 6.0mm	1.4 inches (36mm)

Maximum Length (feet) vs Circuit Breaker Size

Cable	Startup Temp.	120 V				240 V			
Breaker Size		15A	20A	30A	40A	15A	20A	30A	40A
PLSRR-6-1 and PLSRR-6-2	50°F (+10°C)	230	270	270	270	460	540	540	540
	32°F (0°C)	230	270	270	270	460	540	540	540
	14°F (-10°C)	180	210	270	270	360	420	540	540
	0°F (-18°C)	140	190	270	270	285	380	540	540
	-20°F (-29°C)	125	165	250	270	250	330	500	540
	-40°F (-40°C)	110	145	220	270	220	295	440	540
PLSRR-8-1 and PLSRR-8-2	50°F (+10°C)	150	200	210	210	300	400	420	420
	32°F (0°C)	150	200	210	210	300	400	420	420
	14°F (-10°C)	140	150	205	210	280	300	410	420
	0°F (-18°C)	100	130	200	210	200	265	400	420
	-20°F (-29°C)	85	115	175	210	175	235	350	420
	-40°F (-40°C)	80	105	155	210	155	210	315	420
PLSRR-10-1 and PLSRR-10-2	50°F (+10°C)	120	160	180	180	240	315	360	360
	32°F (0°C)	105	140	170	180	210	280	340	360
	14°F (-10°C)	95	125	165	180	190	250	330	360
	0°F (-18°C)	80	110	160	180	160	215	325	360
	-20°F (-29°C)	70	95	140	180	145	190	285	360
	-40°F (-40°C)	60	85	125	170	125	170	255	340
PLSRR-12-1 and PLSRR-12-2	50°F (+10°C)	80	140	150	150	160	270	310	310
	32°F (0°C)	75	130	145	150	150	260	290	310
	14°F (-10°C)	70	115	142	150	140	230	285	310
	0°F (-18°C)	60	80	140	150	120	160	280	310
	-20°F (-29°C)	50	65	110	150	105	140	225	310
	-40°F (-40°C)	45	60	90	140	90	125	190	280



Ordering Information

PLSRR- ☐ - ☐ - ☐ (PLSRR-8-2-CR)

Outer jacket
CR=Thermoplastic

Supply Voltage
1=110-120VAC;
2=208-277VAC

Output Power (at 40°F)

Example: PLSRR-8-2-CR = 8 watt, 208-277V, Thermoplastic outer jacket

Approvals:

Pipe Tracing

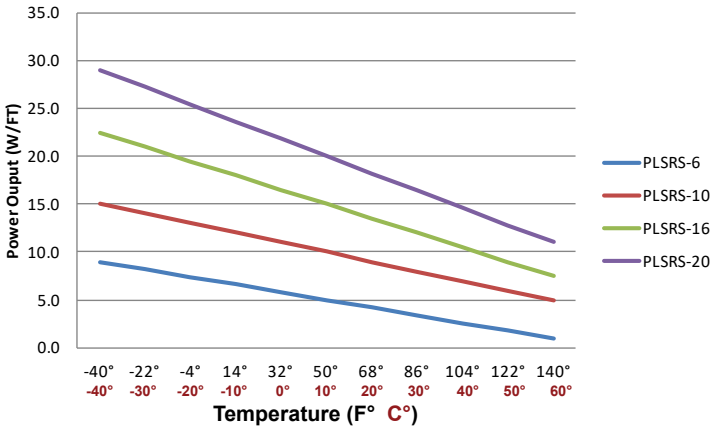
PLSRS High Temp Heat Trace Cable

PLSRS is an industrial grade self-regulating heat cable designed for high temperature pipe trace applications. The cable features a flexible outer jacket and durable carbon core, providing consistent performance, long lifespan, and easy installation in cold temperatures.

Technical Data for PLSRS Heat Cable	
Service voltage	110-120 V, 208-277 V
Maximum maintain or continuous exposure temperature (power on)	+248°F (120°C)
Maximum intermittent exposure temperature 1,000 hours (power on/off)	+392°F (200°C)
Minimum installation temperature	-40°F (-40°C)
Protective braid resistance	<18.2Ω/km
Bus wire gauge	16 AWG
Approvals	ATEX (hazardous), CE, IECEx (hazardous)
Warranty	10 years

Power Output Curves

Watts per Foot vs. Temperature



PLSRS Dimensions and Bend Radius

Type	Dimensions	Minimum Bend Radius
PLSRS-CT	12.4 x 4.8 mm	1.10 inches (28 mm)

Maximum Length (feet) vs Circuit Breaker Size

Cable	Startup Temp.	120 V				240 V			
Breaker Size		15A	20A	30A	40A	15A	20A	30A	40A
PLSRS-6-1 and PLSRS-6-2	50°F (+10°C)	180	240	360	385	360	480	720	765
	32°F (0°C)	180	240	360	385	360	480	720	765
	14°F (-10°C)	170	220	340	385	340	440	680	765
	0°F (-18°C)	160	210	320	385	315	420	625	765
	-20°F (-29°C)	150	200	305	385	300	395	595	765
	-40°F (-40°C)	145	195	290	385	285	380	570	765
PLSRS-10-1 and PLSRS-10-2	50°F (+10°C)	110	145	220	270	220	295	440	540
	32°F (0°C)	110	145	220	270	220	295	440	540
	14°F (-10°C)	100	140	205	265	200	280	410	540
	0°F (-18°C)	95	130	195	260	195	260	385	540
	-20°F (-29°C)	95	125	190	250	195	250	370	540
	-40°F (-40°C)	90	120	180	240	175	240	355	540
PLSRS-16-1 and PLSRS-16-2	50°F (+10°C)	75	100	160	160	140	200	315	315
	32°F (0°C)	75	100	160	160	140	200	315	315
	14°F (-10°C)	70	100	160	160	135	200	315	315
	0°F (-18°C)	65	95	150	160	130	175	275	315
	-20°F (-29°C)	60	90	145	160	125	165	260	315
	-40°F (-40°C)	55	85	135	160	120	155	245	315
PLSRS-20-1 and PLSRS-20-2	50°F (+10°C)	55	85	130	140	115	155	245	275
	32°F (0°C)	55	85	130	140	115	155	245	275
	14°F (-10°C)	50	80	125	140	100	140	220	275
	0°F (-18°C)	50	80	120	140	100	140	215	275
	-20°F (-29°C)	45	75	115	140	90	130	205	275
	-40°F (-40°C)	45	70	110	140	90	125	190	265

Ordering Information

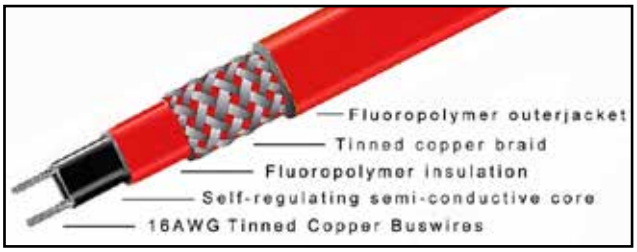
PLSRS- ☐ - ☐ - ☐ For example: PLSRS-10-2-CT

- **Outer jacket** T=Fluoropolymer
- **Supply Voltage** 1=110-120VAC; 2=208-277 VAC
- **Output Power** (at 40°F)

Example: PLSRS-10-2-CT = 10 watt, 208-277 V, Fluoropolymer outer jacket

NOTE: *This product is a special order item. Please contact Warmzone for more details.*

Spools of Warmzone self-regulating pipe trace cable.



Cutaway view of PLSRS self-regulating heat trace cable.

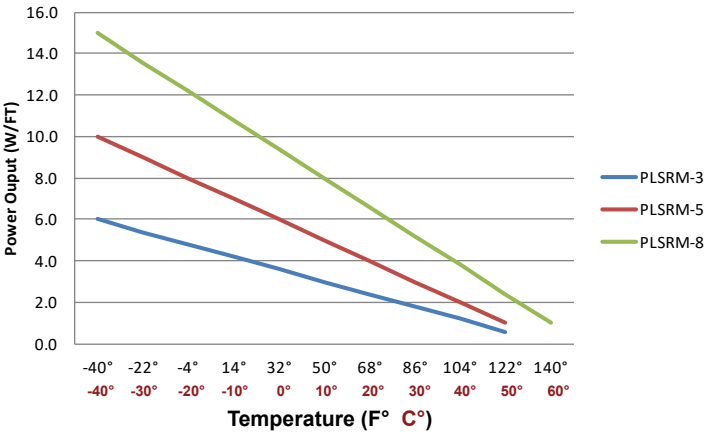
Approvals:

PLSRM Heat Trace Cable Data Sheet

PLSRM self-regulating heat cable is designed for pipe trace applications. The cable provides safe, reliable heat tracing for freeze protection or temperature maintenance of pipes, valves, and flanges, etc. PLSRM heat cable is suitable for use on small diameter plastic or metal pipes and instrument tubing in residential and light commercial applications. The heat cable features a flexible outer jacket and durable carbon core, providing consistent performance, long lifespan, and easy installation in cold temperatures.

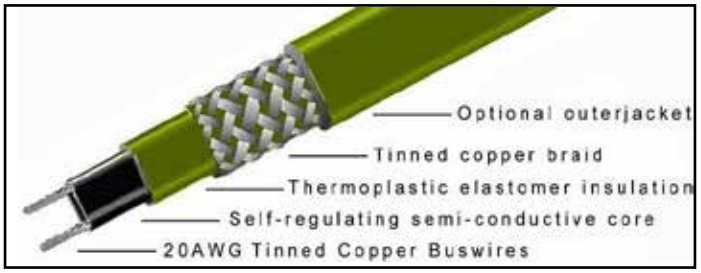
Technical Data for PLSRM Heat Cable	
Service voltage	110-120 V, 208-277 V
Maximum maintain or continuous exposure temperature (power on)	+149°F (65°C)
Maximum intermittent exposure temperature 1,000 hours (power on/off)	+185°F (85°C)
Minimum installation temperature	-40°F (-40°C)
Protective braid resistance	<18.2Ω/km
Bus wire gauge	20 AWG
Approvals	cETLus
Warranty	2 years

Watts per foot **Power Output Curves**



PLSRM Dimension and Bend Radius

Type	Dimensions	Minimum Bend Radius
PLSRM-C	6.7 x 4.1 mm	.99-inch (25 mm)
PLSRM-CR	8.3 x 5.7 mm	1.3 inches (34 mm)



Cutaway view of PLSRM self-regulating heat trace cable.

Maximum Length (feet) vs Circuit Breaker Size

Heat Cable	Startup Temp.	120 V					240 V		
Breaker Size		15A	20A	30A	40A	15A	20A	30A	40A
PLSRM-3-1 and PLSRM-3-2	50°F (+10°C)	160	160	160	160	320	320	320	320
	32°F (0°C)	160	160	160	160	320	320	320	320
	14°F (-10°C)	130	160	160	160	260	320	320	320
	0°F (-18°C)	120	140	160	160	240	280	320	320
	-20°F (-29°C)	107	133	160	160	214	266	320	320
	-40°F (-40°C)	93	120	160	160	186	240	320	320
PLSRM-5-1 and PLSRM-5-2	50°F (+10°C)	127	133	133	133	254	266	266	266
	32°F (0°C)	127	133	133	133	254	266	266	266
	14°F (-10°C)	105	120	133	133	210	240	266	266
	0°F (-18°C)	93	113	133	133	186	226	266	266
	-20°F (-29°C)	80	107	120	133	160	214	240	266
	-40°F (-40°C)	67	93	105	133	134	186	210	266
PLSRM-8-1 and PLSRS-8-2	50°F (+10°C)	87	113	113	113	174	226	226	226
	32°F (0°C)	87	113	113	113	174	226	226	226
	14°F (-10°C)	80	90	113	113	160	180	226	226
	0°F (-18°C)	69	80	105	113	138	160	210	226
	-20°F (-29°C)	63	73	95	113	126	146	190	226
	-40°F (-40°C)	53	67	80	113	106	134	160	226

Ordering Information

PLSRM- ☐ - ☐ - ☐ For example: PLSRM-5-2-CR

Outer jacket
C=Tinned copper braid (no outer jacket)
R=Thermoplastic

Supply Voltage
1=110-120VAC; 2=208-277 VAC

Output Power (at 40°F)

Example: PLSRM-5-2-CR =
5 watt, 208-277 V, Thermoplastic outer jacket

NOTE: *This product is a special order item. Please contact Warmzone for more details.*

Self-Regulating Heat Cable Comparison

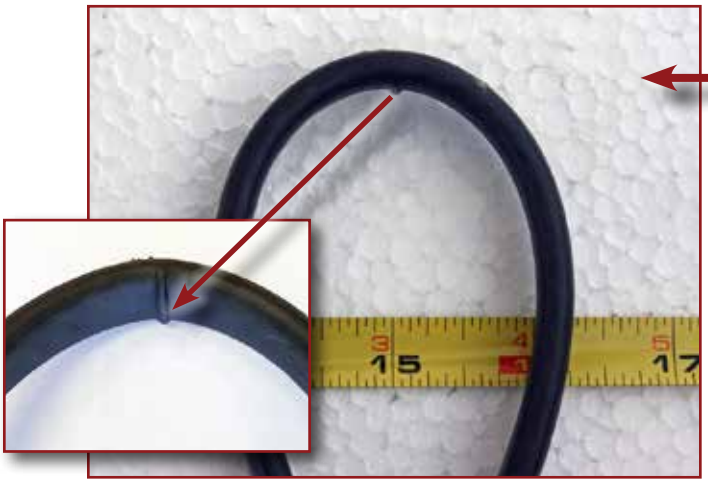
Warmzone self-regulating heat cable features a more flexible outer jacket and more durable carbon core than other leading brands of self-reg cable. These features provide more consistent performance, longer lifespan, and easier installation in cold temperatures.

Key Features of Warmzone Self-regulating Heat Cable vs. Other Cable Brands

Outer Jacket Quality

Typical Self-regulating Heat Cable

The outer jacket of typical self-reg cable tends to "bubble" or separate from the cable core when the cable is manipulated for turns. These irregularities create stress points on the cable that can result in water reaching the core, leading to erratic heating and eventual cable failure.



Other Leading Brands of Self-regulating Cable

The outer jacket of most self-regulating heat cable separates from the core at a typical bend radius of 2 inches.

Warmzone Self-regulating Heat Cable

Warmzone self-regulating heat cable features a higher quality outer jacket that does not "bubble". This reduces the chances of water seepage and cable failure.

Warmzone Radiant Self-regulating Heat Cable

Warmzone self-regulating heat cable does not "bubble" at an even tighter bend radius of 1½ inches.

Installation at Low Temperatures

Typical Self-regulating Heat Cable

Typical self-regulating cable has a minimum installation temperature of 32-40°F. This is because the carbon in the cable becomes brittle and can easily break when bent or manipulated at low temperatures.

The outer jacket also becomes stiff, making the securing of cable to the pipes difficult during cold weather installations. The outer jacket tends to "pucker" and pull away from the core when making bends, compromising the cable's integrity and leading to cable failure. Therefore installing most self-regulating heat cable at temperatures below 40°F is not recommended.

Warmzone self-regulating heat cable and plug with GFCI.

Warmzone Self-regulating Heat Cable

Warmzone self-regulating cable features a higher quality carbon center that is more resilient in low temperatures, thereby allowing the cable to be safely installed at temperatures as low as 0°F.

The higher quality outer jacket also remains flexible at low temperatures, resulting in more reliable performance and easier installation when securing to various pipe trace applications.

"In all the years I've been installing radiant heating systems, I've noticed that "bubbles" in the outer jacket of the cable almost always result in a point of failure. The superior outer jacket of Warmzone's self-reg cable helps to eliminate this problem."

– Eric W., Licensed Contractor

Pre-Assembled Heat Trace Cable

Warmzone's pre-assembled (pre-terminated) self-regulating heat cable is the premier solution for quick, easy installation for various pipe trace applications. The 120 volt pre-assembled plug-and-play kits come with the option of a standard power cord with or without a GFCI power plug. The termination, power connection, splice, tee, and end seal kit reduces installation time and requires no special skills or tools.

PLSRT-1 120 V Pre-Assembled Heat Cable

Warmzone PLSRT-120 pre-assembled self-regulating heating cable is designed for commercial metal and plastic pipe protection and roof and gutter deicing applications. The 120-volt heating cables are available in 6, 12, 18, 24, 50, 75, 100, 125 and 150-foot lengths, and each comes assembled with a 6-foot power cord and plug. (Optional GFCI plus available.)

PLSRT-1 heating cables may be used on:

- Roofs made from all types of standard roofing materials, including shake, shingle, rubber, tar, wood, metal, and plastic.
- Gutters made from standard materials, includin metal and plastic.
- Downspouts made from standard materials, including metal and plastic.

Warmzone 120 V pre-terminated self-regulating heat cable.

PLSRT-1 General Specifcations (110-120 V)

Nominal cable width	½-inch (12.7 mm)
Nominal cable thickness	.24-inch (6.1 mm)
Bus wire gauge	16 AWG
Circuit breaker size	15 amps
Plug rating	15 amps
Maximum exposure temperature	150°F (65°C)
Minimum installation temperature	-40°F (-40°C)
Voltage rating	110-120 V (For 208-277 V, please call)
Protective braid resistance	< 18.2Ω/km
Cold lead length	6 feet with plug
Electrical classification	Non-hazardous; ordinary areas
Exposure to chemicals	None
Warranty	2-years

General Instructions

- Install only in accessible locations; do not install behind walls or where the cable would be hidden.
- Do not run the heating cable through walls, ceilings, or floors.
- Connect only to ground-fault protected outlets that have been installed in accordance with all prevailing national and local codes and standards and are protected from rain and other water.

General Usage Guidelines

- Warmzone pre-terminated heating cables are not intended for use on flexible vinyl tubing (such as garden hoses).
- The heating cables should not be used inside any pipes.
- PLSRT pre-assembled heat cable is not intended for freeze protection of liquids other than water or for use in locations classified as 'hazardous'.
- Use a minimum of ½-inch fire-resistant, waterproof thermal insulation when installing the PLSRT heat cable on pipes.
- Never use the heat cable on pipes that may exceed 150°F (65°C).
- Do not use an extension cord with the heat cable.

Warmzone 120 V pre-terminated self-regulating heat trace cable with and without a ground fault circuit interrupter (GFCI).

WARMZONE
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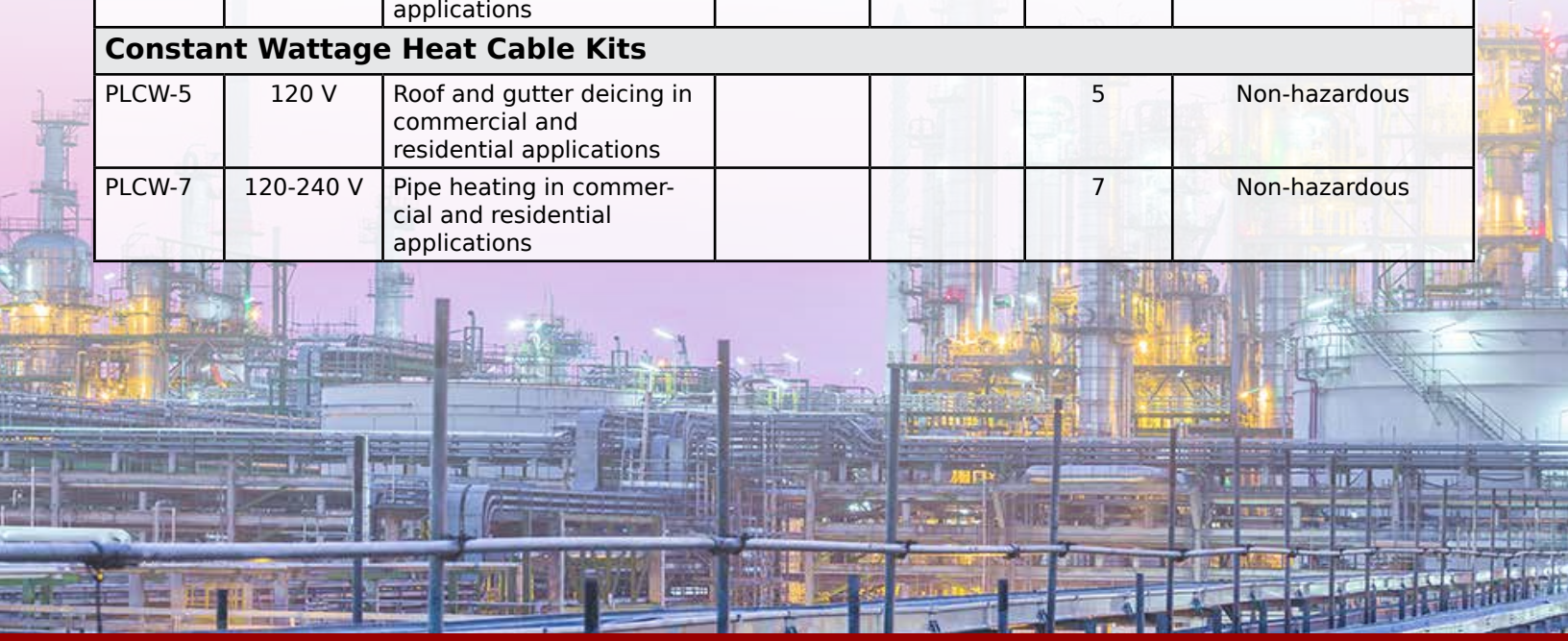
Warmzone Cable Selection Guide

Heat Cable	Voltage	Application	Max. maintain temp	Max. exposure temp	Output at 40°F (watts)	Certification
Self-regulating Heat Cable						
PLSRR	110-120 V 208-277 V	Pipe heating and roof and gutter deicing in commercial and industrial applications	149°F (65°C)	185°F (85°C)	6,8,10,12	Class I, Div.2* Groups A,B,C,D; Class II, Div.2 Groups E, F, G; Class III, T-coded (T5 or T6)
PLSRP	110-120 V 208-277 V	Industrial pipe and tank heating applications	230°F (110°C)	275°F (135°C)	6,10,16,20	Class I, Div.2* Groups A,B,C,D; Class II, Div.2 Groups E, F, G; Class III, T-coded (T5 or T6)
PLSRS	110-120 V 208-277 V	Industrial pipe and tank heating applications	248°F (120°C)	392°F (200°C)	6,10,16,20	Class I, Div.2* Groups A,B,C,D; Class II, Div.2 Groups E, F, G; Class III, T-coded (T5 or T6)
PLSRM	110-120 V 208-277 V	Residential water pipe heating applications	149°F (65°C)	185°F (85°C)	3,5,8	Non-hazardous
Pre-assembled Self-regulating Heat Cable (Pre-terminated)						
PLSRT	110-120 V 208-277 V	Roof and gutter deicing and metal and plastic pipe protection in commercial and residential applications	149°F (65°C)	149°F (65°C)	6	Non-hazardous
Constant Wattage Heat Cable Kits						
PLCW-5	120 V	Roof and gutter deicing in commercial and residential applications			5	Non-hazardous
PLCW-7	120-240 V	Pipe heating in commer-cial and residential applications			7	Non-hazardous



WARMZONE
PREMIER RADIANT HEATING

Pipe Trace Controls

Warmzone offers state-of-the-art, custom engineered control panels designed for your specific requirements. Warmzone controllers continuously monitor your heat tracing system and provide you with user-settable alarms for temperature, heater current and ground fault current (all independent of the trip levels) to maintain your heat trace system and warn you of potential problems. This advanced heat trace system offers local, group and central computer interfaces.

Features and Benefits Include:

Alarm Outputs and Early Warning Alarm – Alarm alerts users to problems, even when the circuit is not in use.

Modbus® Protocol – Allows easy interfacing with the master controller software and links to PLC and DCS systems.

Statistics Monitoring – Plant-wide Windows-based monitoring software allows users to save energy by monitoring peak demand times. Provides energy monitoring tools through the measured values of heater utilization, power consumption (MWh), and operating costs.

Staggerstart (Power Limiting) – Limits initial startup power.

Proportional Control – Provides tight process temperature control.

Custom Configured Software Interface – Local, remote, or centralized control and monitoring are available, as well as standalone control and multi-point control panels.

Switching Unit Options – Solid state or mechanical.

Easy to read Display – 2x16-character alphanumeric display (field mounted or remote mounted).

Friendly Interface and Easy to read Display – Local and Remote interface choices are available. The Local Interface communicates with a single controller of up to 10 circuits and up to five feet away. The Remote Interface communicates with multiple controllers (up to 30 controllers or 300 circuits), to a maximum of 4,000 feet without repeaters.

RS 485 Serial Port Connections

Load Shedding – A master override input allows for external control for load-shedding or ambient control.

Advanced Control

The advanced features of this controller allow it to handle single-phase to three-phase heat trace applications with switch ratings up to 100A at 600 VAC. Integral user-settable ground fault trip protects the heat trace without costly ground fault breakers. The user-settable ground fault test function lets you know if ground fault monitoring is functioning properly. The RTD inputs (dual RTD inputs available) have a user-settable fail-safe strategy.

Master Controller Centralized Monitoring

For plant-wide monitoring, the master controller for windows software package provides programming and monitoring for Warmzone heat tracing controllers on your PC. Process setpoints and alarm levels are programmed for each heater through the computer keyboard, reducing data entry on large systems. Setpoint programming and configuration functions are password protected. By connecting individual modules or panels together, heat tracing throughout an entire plant can be programmed and monitored from a single location.

Warmzone custom controls.

WARMZONE
PREMIER RADIANT HEATING

Pipe Tracing Control Options

Self-regulating Heat Trace Cable

In addition to Warmzone's industry leading self-regulating heat trace cable and professional system design/layout, users also have several activation device/controller options to ensure optimum performance of the pipe trace system.

WS-115 Outdoor Ambient Sensing Thermostat (WS-115) - The WS-115 ambient sensing thermostat is designed to sample temperature changes in the air. The WS-115 can be used in a wide range of heating applications and can serve as a high limit backup for "sensitive" applications. The NEMA 4X rain-tight enclosure provides adequate protection in most environments. The WS-115 thermostat has a temperature range of 40°F to 110°F and can handle up to 22 amps at 277 VAC.

WS-115R Outdoor Surface Sensing Thermostat (WS-115R) - The WS-115R surface sensing thermostat samples temperature changes in the surface. The sensor is typically used as a line sensing control for pipes, vessels and other types of electric heat tracing applications. Suitable for use in agricultural, industrial and commercial environments. The NEMA 4X rain-tight enclosure provides adequate protection in most environments.

WS-115 and 115R Features

- Rugged weather resistant enclosure made of corrosion resistant materials for long life.
- Stainless steel remote bulb provides rapid response to temperature change.
- Low mass, high surface area of stainless steel coiled sensor provides rapid response to temperature change.
- Large, readily visible dial with 0°F - 120°F temperature range and 40°F - 110°F.
- Multi-positional mounting offers flexibility in either new or existing installations.
- One control for both heating and cooling applications.
- Complies with NEC 547 and NEMA 4X requirements.

Industrial Electronic Thermostat (WS-IET) - The IET is a microprocessor-based temperature controller designed to provide on/off control for commercial heating, cooling, air conditioning and refrigeration applications. Its comprehensive functionality makes the IET is one of the most versatile temperature controls available.

The IET features a lockable front-panel touchpad and a Liquid Crystal Display (LCD) for viewing the temperature and status of other functions. The digital display and keypad allow precise temperature settings.

When not in the programming mode, the display provides a constant readout of the sensor temperature. Annunciators on the liquid crystal display indicate when the relay is energized. The IET is also equipped with diagnostic programs that check for hardware, software or system problems and display different error codes to indicate the problem and its location.

PLSR-130/230 (Single or Dual Channel Heat Trace Control) - The PLSR-130/230 controls are single or dual point microprocessor based heat trace control thermostats. They are ideal for a variety of uses including freeze protection, hot water temperature maintenance, grease line trace, tank heating, and other temperature monitoring and control applications. Features include: Adjustable temperature setpoint allows precise control of a wide range of processes, ground fault equipment protection, precision monitoring and control, thermistor temperature sensor with 20 ft. cable included for applications of -40°F to 230°F (-40°C to 110°C), Durable weather-resistant NEMA 4X IP66 enclosure permits indoor or outdoor installation.

Pipe Trace

Cable Accessories and Connections

Item Code and Description	Components
PLSR-PTBO - Multiple entry power connection kit and junction box	Multiple entry octagon power connection kit with J-box; hazardous locations, NEMA 4X 
PLSR-JHE - End seal kit (hazardous locations)	**A** Seal plate for main box **B** Main end seal box **C** Grommets **D** Label 
PLSR-JHE-L - Lighted end seal kit (hazardous locations)	**A** End seal stand and light assembly **B** Insulated and parallel crimps (2) **C** End seal label **D** Core sealer 
PLSR-JHS - Inline splice tee kit (hazardous locations)	**A** Main box **B** Pressure seal end **C** Grommets **D** Gaskets for main box **E** Cover for main box **F** Label 
PLSR-JHT - Tee splice (hazardous locations)	**A** Main box **B** Pressure seal end **C** Grommets **D** Gaskets for main box **E** Cover for main box **F** Label 
PLSR10 - Splice / tee kit	**A** Clamp tie **B** Mastic strips (1½" long x 1" wide) **C** Heat-shrinkable tube (8" long x 1" diameter) **D** Heat-shrinkable tube (1" long x ⅛" diameter) **E** Heat-shrinkable tube (1" long x ½" diameter) **F** Uninsulated braid crimp **G** Heat-shrinkable tube for ground **H** Insulated bus wire crimps **I** Black cloth tape (6" long) **J** Heat-shrinkable cap **K** Cable ties 
PLSR00 - Power connection kit with single end seal	**A** Black-shrinkable tube (2) (5½" long x ⅛" diameter) **B** Green-shrinkable tube (6" long x ¼" diameter) **C** Black-shrinkable tube (1" long x ½" diameter) **D** Seal fitting and grommet **E** Mounting bracket for piping **F** Gasket **G** Lock nut **H** Grommet **I** Wire nuts (3) **J** Labels (4) 
PLSR03 - Fiberglass or aluminum tape	**A** Roll of tape **B** Ten (10) warning labels 

WARMZONE
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Warmzone Pipe Trace Solutions

Warmzone carries a variety of the industry's most trusted self-regulating heat cable to best serve the demands of industrial and commercial pipe trace applications. In addition to offering premium cable, Warmzone also includes unmatched customer services, including system design/layout, installation training and technical support. Warmzone is your complete, professional pipe trace solutions partner.

Warmzone self-regulating heat trace cable with junction box power connection kit and lighted end seal installed for pipe tracing application.

WARMZONE
PREMIER RADIANT HEATING

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Draper, UT 84020 USA
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WARMZONE
PREMIER RADIANT HEATING

Floor Heating

RADIANT FLOOR HEATING SYSTEMS

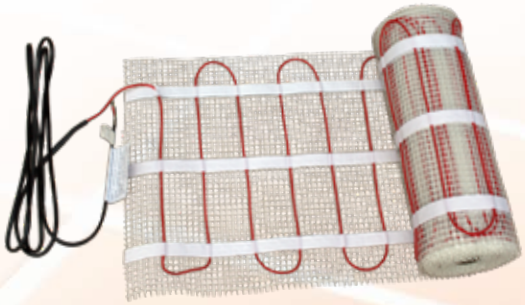
ComfortTile

Radiant Floor Heating Systems

Warmzone's ComfortTile radiant floor heating system is one of the most popular and durable floor heating solutions on the market. Available pre-spaced in mats with an adhesive backing or on the spool, the versatile heat cable is effective for virtually all types of floor surfaces, including tile, marble, slate, laminates, and hardwood.

ComfortTile Floor Heating System Features Include:

- Single-point connection
- Twin-conductor cable
- Safety approved for wet locations
- Flexible installation
- Durable construction
- 25-year warranty



Warmzone CT Floor Heating Mat

The ComfortTile floor warming system includes a heating cable that is pre-spaced on an adhesive backed fiberglass mesh that allows for quick, simple rollout installation.

Warmzone CT Floor Heating Cable

Available off the spool, the ComfortTile floor warming cable includes heat cable with a 10-foot cold lead.

CT Floor Heating Cable Specifications

Cable construction	Twin conductor
Rated voltage	120 V, 240 V
Output (cables)	12W/ft.^{2} (130W/m^2)±10% (at recommended spacing)
Output (mats)	12W/ft.^{2} (130W/m^2)±10%
Recommended spacing	3-inches (76.2mm)
Bending radius	1-inch (25.4mm)
Cable diameter	1/8 to 1/6-inch (3.2mm-4.2mm)
Conductor insulation	Fluoropolymer
Outer insulation	High temperature PVC
Max. ambient temperature	104°F (40°C)
Min. installation temperature	40°F (5°C)
Cold lead	2-wire 16 AWG plus ground braid; 10 feet (3m) length

All of the Warmzone radiant floor heating systems offer you a choice of technologically advanced thermostats.

Warmzone Floor Heating Ordering Information

The most commonly ordered floor heating cable sizes are listed below.

To order additional sizes and voltages, please contact a Warmzone representative at 888.488.9276.

ComfortTile

Floor Heating Mats

120 Volt Mat

Item Number	Heated Area (Sq. ft.)	Mat Dimensions (Feet)	Watts (12 W/Sq. ft.)	Amps	Ohms
TM1010	10	1.5 x 6.7	120	1.0	120.0
TM1020	20	1.5 x 13.3	240	2.0	60.0
TM1030	30	1.5 x 20.0	360	3.0	40.0
TM1040	40	1.5 x 26.7	480	4.0	30.0
TM1050	50	1.5 x 33.3	600	5.0	24.0
TM1060	60	1.5 x 40.0	720	6.0	20.0
TM1070	70	1.5 x 46.7	840	7.0	17.1
TM1080	80	1.5 x 53.3	960	8.0	15.0

240 Volt Mat

Item Number	Heated Area (Sq. ft.)	Mat Dimensions (Feet)	Watts (12 W/Sq. ft.)	Amps	Ohms
TM2010	10	1.5 x 6.7	120	0.5	480.0
TM2020	20	1.5 x 13.3	240	1.0	240.0
TM2030	30	1.5 x 20.0	360	1.5	160.0
TM2040	40	1.5 x 26.7	480	2.0	120.0
TM2050	50	1.5 x 33.3	600	2.5	96.0
TM2060	60	1.5 x 40.0	720	3.0	80.0
TM2070	70	1.5 x 46.7	840	3.5	68.6
TM2080	80	1.5 x 53.3	960	4.0	60.0
TM2090	90	1.5 x 60.0	1080	4.5	53.3
TM2100	100	1.5 x 66.7	1200	5.0	48.0
TM2120	120	1.5 x 80.0	1440	6.0	40.0

WARRANTY INFORMATION: 25-year limited warranty.

Floor Heating Cable

120 Volt Cable

Item Number	Length (Feet)	Approximate Heat Coverage (Square feet)			Watts	Amps	Ohms
		2-inch spacing	Standard 3-inch spacing	4-inch spacing			
TC10120	38.9	6	10	13	120	1.0	120.0
TC10240	77.8	13	19	26	240	2.0	60.0
TC10360	116.7	19	29	39	360	3.0	40.0
TC10480	155.6	26	40	52	480	4.0	30.0
TC10600	194.5	32	49	65	600	5.0	24.0
TC10720	233.5	39	58	78	720	6.0	20.0
TC10840	272.4	45	68	91	840	7.0	17.1
TC10960	311.3	52	78	104	960	8.0	15.0
TC11210	391.7	65	98	131	1210	10.1	11.9
TC11420	461.1	77	115	154	1420	11.8	10.1

240 Volt Cable

Item Number	Length (Feet)	Approximate Heat Coverage (Square feet)			Watts	Amps	Ohms
		2-inch spacing	Standard 3-inch spacing	4-inch spacing			
TC20120	38.9	6	10	13	120	0.5	480
TC20240	77.8	13	19	26	240	1.0	240
TC20360	116.7	19	29	39	360	1.5	160
TC20480	155.6	26	39	52	480	2.0	120
TC20600	194.5	32	49	65	600	2.5	96.0
TC20720	233.5	39	58	78	720	3.0	80.0
TC20840	272.4	45	68	91	840	3.5	68.6
TC20960	311.3	52	78	104	960	4.0	60.0
TC21080	350.2	58	88	117	1080	4.5	53.3
TC21200	389.1	65	97	130	1200	5.0	48.0
TC21440	466.9	78	117	156	1440	6.0	40.0
TC21580	512.0	85	128	171	1580	6.6	36.5
TC21790	580.1	97	145	193	1790	7.5	32.2
TC21930	626.8	104	157	209	1930	8.0	29.8
TC22090	678.4	113	170	226	2090	8.7	27.6
TC22280	738.8	123	185	246	2280	9.5	25.3
TC22420	783.3	131	196	261	2420	10.1	23.8
TC22630	851.8	142	213	284	2630	11.0	21.9
TC22840	922.2	154	231	307	2840	11.8	20.3

In-Slab

Floor Heating Cable for Concrete Slab

In-Slab floor heating cable is designed for installation in new concrete slab applications. The heat cable is tied directly to the remesh and embedded at least ½-inch below the surface. The thermal heating cable efficiently uses the concrete slab to store and distribute heat evenly throughout its intended area. The Warmzone heat cable is affordable and can be installed commercially or in residences to provide radiant heating for virtually any type of flooring, including decorative concrete, hardwood, carpet, laminate and ceramic tile to provide luxurious warmth to any home or business.

Floor Heating Applications

Designed to produce 10-15 watts per square foot, Warmzone In-Slab heating cable is the premier floor heating solution for in-slab applications and decorative concrete of both custom residential and large commercial projects. The radiant floor heating system can efficiently provide comfortable heat for virtually any type of radiant floor heating application, ranging from decorative concrete to hardwood, carpet, laminates, and ceramic tile.

The In-Slab radiant floor heating system offers maintenance-free operation, is easy to install and features a comprehensive 10-year manufacturer warranty. Because the In-Slab heat cable is waterproof, it is safe for use in both wet and dry applications, including tiled shower and bathroom floors.

Decorative Concrete

In-Slab heat cable has proven to be perfectly suited for heating decorative concrete floors. Designed to withstand the stress of heavy concrete pours, Warmzone In-Slab heat cable is ideal for safely heating decorative and stained concrete floors without affecting the luster of colors over time. The reliability of the slab heating system has made it a favorite among professionals specializing in concrete floor installations. In-Slab heat systems feature rapid response times and utilizes the concrete slab to store and distribute heat, maximizing the efficiency of the system.

Versatile and Easy to Install

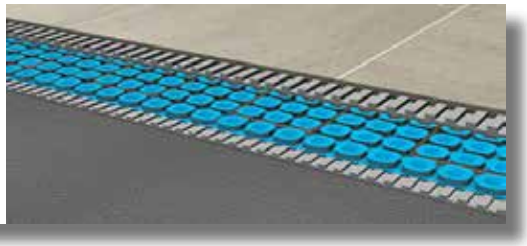
The In-Slab floor heating system is easy to customize and install in any size or shape of room. While it can be installed under any type of floor, the cable is required to be embedded in at least ½-inch of concrete or mortar.

Features and Benefits

- Single-point connection simplifies installation
- Safe for use in wet and dry applications
- For commercial and residential
- Save money by heating during “off-peak” hours
- Durable construction
- Flexible and easy to install
- Can be installed in concrete slab under virtually all floor types. (Ideal for heating decorative concrete.)
- 10-year manufacturer warranty

In-Slab heating cable is durable, versatile, and easy to install. Warmzone In-Slab heat’s proven track record is one reason why it’s a favorite among professional builders.

PRODESO
MEMBRANE SYSTEM



Prodeso® Floor Heating Membrane System

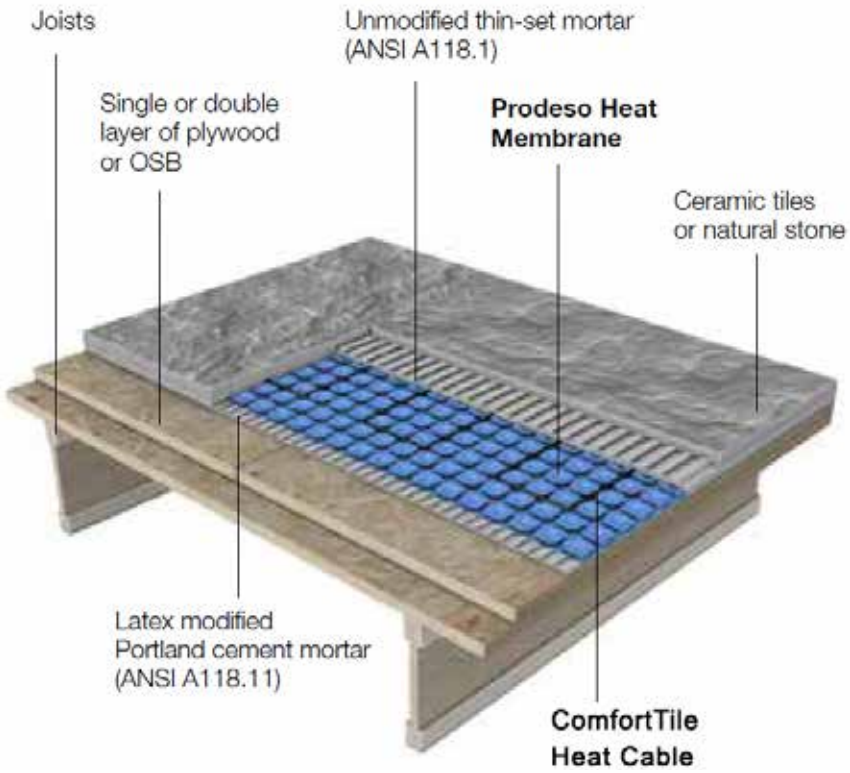
The Prodeso® membrane system is an innovative uncoupling and waterproofing system for heating floors and other surfaces without movement or expansion joints in the screed. The membrane comes in rolls and is laid out directly over the subfloor before the flooring surface is installed. The membrane features pre-engineered channels for the heat cable to be routed, providing accurate spacing and easy installation.

ComfortTile heat cable being installed in the channels of the Prodeso membrane.

The power lead is a thin flat two-core flexible cord, consisting of two insulated conductors with a metal sheath and an outer sheath. The heating element is connected to a power-supply cable that exits the laminate mat from one corner. It is available in predetermined lengths with cold tail, prefabricated and tested in a carefully controlled factory environment.

Thin set, the Prodeso membrane, heat cable and tile.

The Prodeso system can dramatically reduce installation times. After the membrane is laid out, floor heating cable is installed in the pre-engineered channels and the floor surface can then be installed over the membrane and cable. The membrane is versatile and can be used on virtually all types of indoor and outdoor applications. The Prodeso system is safe under all conditions and weather, and can be used to heat a wide variety of floor surfaces. It even waterproofs the substrate in the case of overlaying on cracked or imperfectly cured floors with a risk of vapor stress. The flexible Prodeso floor heating membrane results in minimal floor buildup of less than 1/4-inch.



FoilHeat

Warmzone Radiant FoilHeat Floor Warming System

Warmzone FoilHeat cut-and-turn floor heating mat is a unique electric radiant floor heating system that is designed for use under carpet, laminate, engineered wood and other floating floors. The FoilHeat mats can be cut and shaped on site to meet the specific requirements of the project. The efficient floor heating system is ideal for heating any size or shape room, from basements and bedrooms to commercial offices, and more.

Heated Carpet and Laminate Flooring

Warmzone's FoilHeat cut-and-turn floor heating mat is a unique electric radiant floor heating system that is designed for use under carpet, laminate, engineered wood and other floating floors. The FoilHeat mats can be cut and shaped on site to meet the specific requirements of the project (see photo below). The efficient floor heating system is ideal for heating any size or shape room, from basements and bedrooms to commercial offices, and more.

Specifications

Power	Available in 120 V and 240 V
Output rating	12 W/ft.^{2}
Thickness	⅛ inch (3 mm)
Cable spacing	2 inches (50 mm)
Cold lead	10 feet (3.0 meters)
Connections	2 conductor with ground
Inner insulation	Advanced flouropolymers

FoilHeat mats can be easily cut on site. (Depending on your heating requirement, FoilHeat is available in 120 and 240 volts at 12 watts per square feet.)

Features and Benefits

- Simple "roll out" installation
- Installs between the insulation pad and the floor
- There is virtually no floor buildup because of the grounded, flat aluminum
- No thin-set is required
- The aluminum construction efficiently distributes heat quickly and evenly
- System is completely grounded and safe
- Watertight (Heated carpet floors can be steam cleaned.)
- UL approved
- 12 watts per square foot (41 BTUs per square foot)
- 5-year manufacturer warranty

NOTE: Any overlay must not exceed an R-value of 1.0.

FoilHeat Ordering Information

All FoilHeat Mats are 20-inches wide

120 V Sizing Guide (12 watts / sq. ft.)

Heated Area (Sq. ft.)	Part Number	Length (feet)	Width (inches)	Wattage (W)	Amps (A)
10	LM1010	6	20	120	1.0
25	LM1025	15	20	300	2.5
50	LM1050	30	20	600	5.0
70	LM1070	42	20	840	7.0

240 V Sizing Guide (12 watts / sq.ft.)

Heated Area (Sq. ft.)	Part Number	Length (feet)	Width (inches)	Wattage (W)	Amps (A)
25	LM2025	15	20	300	1.25
50	LM2050	30	20	600	2.50
95	LM2095	57	20	1140	4.75
140	LM2140	84	20	1680	7.00

WARMZONE
PREMIER RADIANT HEATING

Thermostats and Controls

Interior Radiant Heat Controls

The Warmzone electronic thermostats are specifically designed to control electric radiant floor heating systems for maximum comfort and minimum power consumption. Developed for the modern home, the programmable thermostat features a large back-lit display and simple user interface. The system temperature is controlled by an external or built-in floor sensor.

Each thermostat includes an integrated Ground Fault Circuit Interrupter (GFCI, Class A). The thermostat is an electronic on/off thermostat for controlling the temperature using a sensor placed externally. The heat output is switched on and off with a difference of only 0.7°F (0.4°C).

Adjustable Temperature Offset

The set point can be adjusted to match the actual floor temperature. This ensures a 100 percent accurate measurement and control of your underfloor heating system.

The thermostat can be configured for control of the floor temperature and regulator without a sensor. The advanced thermostat is compatible with existing floor sensors by means of a temperature setting, making it the best thermostat for renovation purposes.

Temperature Temperature Scale and Limitation

The floor temperature scale can be adjusted within the temperature range of +41°+104°F. The thermostat also features a maximum temperature function to protect wood floors and minimum temperature functions for comfort. Designed for ease of use and superior performance, the thermostat and GFCI are dual voltage models suitable for 120/240V, 50/60 Hz power supplies.

General Thermostat Specifications

Functions	On/Off control, easy-to-read digital display, 7-day programmable
Supply voltage	120/240 V ±15%, 50/60 Hz
Load	15A maximum (resistive load)
Power	1.800 W at 120 VAC / 3.600 W at 240 VAC
Temperature control range	40 to 104°F (5 to 40°C)
Ambient temperature range	32 to 104°F (0 to 40°C)
Floor temperature sensor	2-wire, 10-foot lead wire
Floor sensor type	NTC (12 KΩ) 10 ft (3 meters)
GFCI	Class A (5 mA trip level)
On/Off differential	0.7°F (0.4°C)
Regulation principle	PWM / PI
Housing	NEMA 2 (IP21)
Dimensions (H/W/D)	4.8, 3.0, 1.0 inch (123, 75, 25mm)

Floor Heating Controls and Accessories Ordering Information

Floor Heating Thermostats

Item Code	Description
UDG-499	Programmable thermostat with air sensor (and floor temperature limiter)
UCG-4991	Non-programmable thermostat with floor sensor
USG-4000	Power module with GFCI

Floor Heating Accessories

Item Code	Description
CT-Splice	Repair kit floor (includes crimp connectors, repair wire, heat shrink tubes)
LM-Splice	Repair kit foil (includes crimp connectors, repair wire, heat shrink tubes)
CT-Buzzer	Little buzzer - continuity alarm
81005523	Cable strapping, 25 feet (7.6m)
ETF-144/99	Replacement floor sensor for thermostat

Warmzone Floor Heating Thermostats

CTW Floor Sensing Programmable Thermostat

An “all-in-one” programmable thermostat for electric underfloor heating control where optimal comfort temperature and minimum energy consumption is required. Includes floor sensor with 10-foot (3-meter) cable.

- Simple user interface and thoughtful installation design
- Pre-programmed for quick setup
- Monitored energy consumption
- Easy to use / Simple operation
- Multi voltage: 120-240 VAC (includes 208 VAC)
- Output relay: 15A
- Large back-lit display for easy reading
- Class A GFCI for wet room installation

CTW Dual Sensing Programmable Thermostat

The programmable thermostat with dual sensors is an “all-in-one” programmable thermostat for electric underfloor heating control where optimal comfort temperature and minimum energy consumption is required.

- Simple user interface and thoughtful installation design
- Includes two sensors: a built-in air sensor (to measure room temperature) and a floor sensor with 10-foot (3-meter) cable to measure actual floor temperature.
- Pre-programmed for quick setup
- Monitored energy consumption
- Simple operation (Easy to use)
- Multi voltage: 120-240 VAC (includes 208 VAC)
- Output relay: 15A
- Large back-lit display for easy reading
- Serves as single thermostat for all applications (room, floor, room with floor limitation and as regulator)
- Class A GFCI for wet room installation

CTW Power Module Slave Relay

For large floor heating applications, the Power Module Slave Relay can be extended with additional Power Relay Modules. The PRO Slave Relay module features a built-in Class A GFCI and increases output by 15 amps per module. Output can thus be increased by 15A per module.

- Easy to use
- Screw terminals for safe and easy installation
- For use only with the CT Programmable Thermostat
- Multi voltage: 120-240 VAC (includes 208 VAC)
- Output relay: 15A
- Class A GFCI: suitable for wet room installation

CTW Digital/Non-programmable Thermostat with Floor Sensor

Optimal comfort in controlling electrical underfloor heating. Built on effciency, intuitive operation and with a stylish design. Includes floor sensor with 10-foot (3-meter) cable.

- Simple user interface and thoughtful installation design / Easy to use
- Screw terminals for safe and easy installation
- Multi voltage: 120-240 VAC (includes 208 VAC)
- Output relay: 15A
- Large back-lit display for easy reading
- Class A GFCI: suitable for wet room installation

WARMZONE
PREMIER RADIANT HEATING

Hydronic Radiant Heat

Warmzone Hydronic Products and Services

Warmzone is a nationally recognized authority in the design and installation of hydronic radiant heating and solar hot-water systems. The products and services that Warmzone offers are based on extensive training and years of field experience. Warmzone is customer focused, consultative and unbiased in its product offerings, mechanical engineering services and installation approach. By utilizing Warmzone's dedication and expertise, you can be confident in a complete and seamless radiant heat solution.

Preeminent Consulting and Analysis

Warmzone provides free, no obligation consulting services by experienced professionals to ensure that you'll receive a thorough, upfront analysis of your project. We evaluate every aspect of the system to offer the best, complete solution to meet your specific needs.

Wide Selection of Proven Products

Warmzone offers a wide selection of the industry's most reputable solutions – all at competitive pricing.

Warmzone system components are at the top of their class, so you can be assured that your radiant heat system consists of the most trusted components. From boilers and manifolds to pumps and controls, your system will consist of the very best in each category.

The Radiant Heat Information Authority

Warmzone makes the process of finding, purchasing and installing radiant heat systems easy for construction professionals. Warmzone works directly with installers to make these systems a reality.

Complete Design and Engineering Services

You will receive a comprehensive set of engineering drawings that accurately describe each component of the system and give you a visual perspective on every key process. The hydronic services include:

- Tubing Installation (spacing, sizing, lengths)
- Manifold Placement
- Under Slab Insulation
- Distribution Line Installation (size, lengths)

Mechanical Equipment

- Boiler Systems
- Pump Boards
- Pipe Configurations
- Controls

Unmatched Installation Support

In addition to access to mechanical engineers and electricians, you can request an experienced radiant heat installer to come to your location and supervise the installation. Or, for a complete turnkey solution, you may request for Warmzone to provide an entire hydronic installation crew.

> *"By working with Warmzone, I feel like I have the best radiant heat partner working with me, so I never feel alone during the installation process. The designer, engineer and electrician are always there for me if I have any questions or needs. Their expertise ensures that the installation goes smoothly and the customer is satisfied."*
>
> David V. - Landscape

Left: *Warmzone hydronic snow melting system's mechanical / boiler room and photo of system installed under pavers.*

WARMZONE
PREMIER RADIANT HEATING

Your Local Warmzone Representative

Your Complete Radiant Heat Solutions Provider

Residential, Commercial and Industrial Radiant Heat Applications

Residential Snow Melting

Heated Driveways
Porches and Steps
Ramps and Entry Ways
Sidewalks, Patios and Custom Walkways
Parking Areas
Portable Snowmelt Solutions
Custom Automated Snow Melting Solutions

Radiant Heated Floors

Radiant Heat for all Types of Floor Surfaces
Retrofit Systems for Heating Existing Floors
Hydronic and Electric Floor Heating Solutions
Self-regulating Systems

Commercial Snow Melting

Critical, High-traffic Areas
Ramps and Loading Docks
Outdoor Shopping Malls
Sidewalks and Parking Areas
Federal Government Facilities
State Transit Authorities / Platforms
Helicoptor Pads
Custom Snowmelt Applications
Hydronic and Electric Snowmelt Systems

Roof Heating Solutions

Complete Roof Deicing Systems
Gutter Trace and Downspout Heating
Roof Edge (Panel) Heating
Most advanced Low-voltage Roof Heating

Included Services and Capabilities

Free Professional Consulting (**888.488.9276**)
Complete System Design and Engineering
Industry-leading Customer Service
Post-sales Technical Support
Most Advanced, Proven Products
Technical / Installation Support
Free Product and Installation Training
Free Quotes

Warmzone specializes in providing custom radiant heat systems to match the specific demands of your project. If you have any type of heating need, contact Warmzone today and let the experts assist you in finding the ideal radiant heat system for your needs.

With its focus on preeminent customer service and a wide offering of proven products, Warmzone has established itself as a leading provider of complete interior and exterior radiant heat solutions throughout the United States and Canada.

WARMZONE
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