

Raychem

excellence is everything

Safety and Comfort for Buildings and Homes

Commercial & Residential Markets
— U.S. Plumbing, Canada Plumbing & Electrical

 **WINTER**





Because winters can be harsh...

In winter, freezing temperatures can be a latent danger for buildings and the people who live and work in them. Think for example of the damage that can be caused by frozen pipes. Or the difficulties that can result from icicles on gutters, black ice on driveways, or snow-covered stairs and footpaths. As the responsible person, it is in your best interests to properly equip your buildings and give everyone maximum protection against frost, ice and snow.

This brochure highlights our safety and comfort solutions.

Use the legend below to match the product offering with the market.

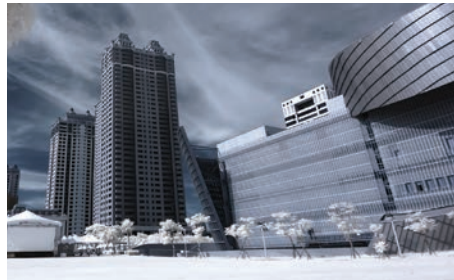
■ RESIDENTIAL / LIGHT COMMERCIAL

Markets which represent basic, reliable solutions for homes and small commercial buildings, such as shops and strip malls.



■ COMMERCIAL / SPECIFICATION

Markets which represent advanced, high-performing, often specified solutions for commercial buildings.



■ RESIDENTIAL / LIGHT COMMERCIAL
■ COMMERCIAL / SPECIFICATION



The solution: intelligent heating systems

Raychem solutions can help you avoid all risks of **material, physical and financial damage**. We have developed a series of innovative, self-regulating heating and freeze protection systems for this purpose. They are all complete, easy to install and efficient solutions to the risk of damage caused by frost, snow and the formation of ice. The low energy consumption is an added bonus. Discover here how our solutions offer you the best possible protection against the lowest temperatures.

Maximum protection, optimum safety

There is an intelligent Raychem heating solution for every application. Most popular examples:

PIPE FREEZE PROTECTION



Modular and flexible cable system for keeping pipes from freezing. This heating solution prevents ice from forming and ensures that water can keep flowing. It prevents burst pipes and water damage.

ROOF & GUTTER DE-ICING



High quality and quick-to-install cable systems for keeping gutters and downspouts free from snow and ice. This heating solution prevents icicle formation and damage to gutters and ensures water can keep flowing freely.

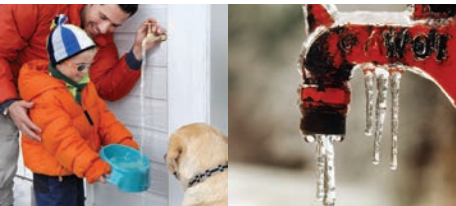
SURFACE SNOW MELTING



Effective and reliable heating systems for keeping driveways, stairs and footpaths free from snow and ice. This heating solution prevents physical injury and vehicle accidents, and saves time clearing snow.

Solutions that Make a Building Winter Safe

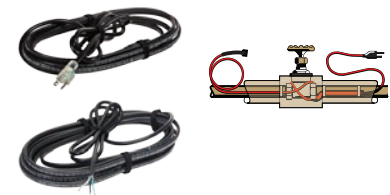
Pipe Freeze Protection – Residential / Light Commercial



Raychem **pipe freeze protection systems** are flexible and easy to attach to the exterior of the pipe to keep pipes from freezing, bursting, and causing water damage.

Our product range allows you to choose the right solution for your application and budget—from a simple preassembled plug-in kit to one that offers energy-saving control and sensing options.

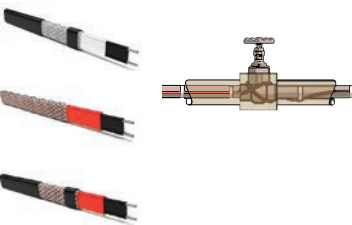
FROSTGUARD PREASSEMBLED PLUG-IN HEATING CABLE SYSTEM



Raychem FrostGuard preassembled self-regulating heating cable with 6-ft cold lead and lighted plug for small piping up to 2-1/2 inches in diameter in dry or wet locations.

- Voltage: 120 V with plug, in lengths of 6, 12, 18, 24, 36, 50, 75 & 100 feet; 240 V with cold lead only, in lengths of 6, 12, 18 & 24 feet
- Control options: Raychem TC-3 outlet for 120 V only.
- Components: Raychem H903 application tape

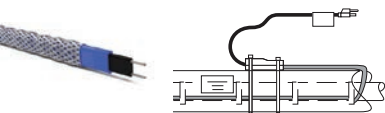
WINTERGARD SERIES PRE-PACKAGED IN STANDARD SPOOL SIZES AND CUT-TO-LENGTH HEATING CABLE SYSTEM



Self-regulating heating cable for piping up to 6 inches in diameter for dry and wet locations. The WinterGard series of products includes Raychem WinterGard, WinterGard Plus and WinterGard Wet. See the chart on pages 6-7 for more details on each.

- Voltage: 120 V or 240 V.
- Control options: Raychem AMC-F5, AMC-1A, EC-TS
- Components: Raychem H900 hardwire or H908 plug-in power connection kit; H903 application tape; H910 Splice/Tee kit

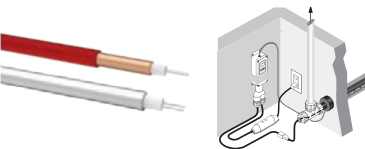
FROSTEX HEATING CABLE SYSTEM WITH FLEXFIT PLUG



Raychem Frostex self-regulating heating cable with FlexFit plug for small residential piping up to 2 inches in diameter and 50 feet in length, installed in dry locations.

- Voltage: 120 V in lengths of 50, 100, 250, 500 ft
- Control options: TC-3 outlet.
- Components: Raychem 9800 FlexFit plug kit; 9610 Application tape

IN-PIPE HEATING CABLE SYSTEM



Raychem mineral insulated In-Pipe Mini is for insulated piping up to 34 feet in length; Raychem In-Pipe Miser is for insulated piping up to 240 feet in length; Raychem In-Pipe Retro 120 V is for uninsulated pipes up to 150 feet in length; and the In-Pipe Retro 240 V is for uninsulated pipes up to 250 feet in length.

- Voltage: Mini, Miser, Retro 120 V; or Retro 240 V.
- Control options: Built-in controller

PIPE FREEZE THERMOSTAT SELECTION DETAILS

GOOD	BETTER	BEST
TC-3	AMC-F5	EC-TS
Thermostatically controlled outlet	<ul style="list-style-type: none">• Mechanical thermostat; Ambient or line sensing• Fixed set point of 40°F (nonadjustable)• 3' bulb and capillary sensor• 22 A at 125/250/480 V	<ul style="list-style-type: none">• Electronic thermostat; Ambient or line sensing• Adjustable set point of 30°F to 110°F• 25' thermistor sensor• 30 A at 100 - 277 V
	AMC-1A	
	Mechanical thermostat; Ambient sensing Adjustable set point of 15°F to 140°F 22 A at 125/250/480 V	

Solutions that Make a Building Winter Safe

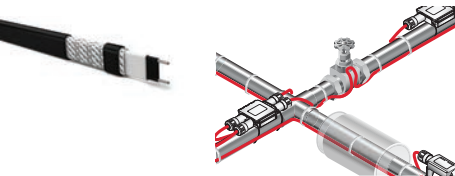
Pipe Freeze Protection – Commercial / Specification



Raychem **pipe freeze protection systems** are flexible and easy to attach to the exterior of the pipe to keep pipes from freezing, bursting, and causing water damage.

Our products work with our basic or advanced energy-saving control and sensing options.

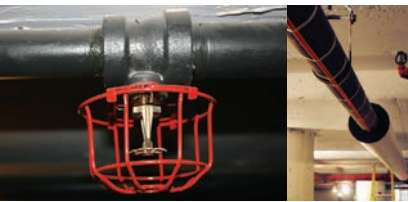
■ XL-TRACE EDGE CUT-TO-LENGTH HEATING CABLE SYSTEM



Raychem XL-Trace Edge self-regulating heating cable with either fluoropolymer or polyolefin outer jacket for piping of all sizes in dry and wet locations.

- Voltage: 120 V or 208-277 V
- Control options: Single or multi-circuit, integrated power distribution, energy monitoring, BMS communications
- Components: Raychem RayClic quick connect; FTC heat shrinkable fittings

FIRE SPRINKLER FREEZE PROTECTION – COMMERCIAL / SPECIFICATION

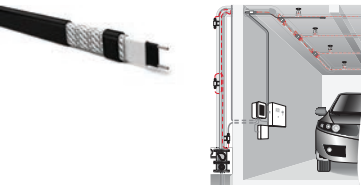


Raychem **fire sprinkler freeze protection systems** freeze protect aboveground and buried supply pipes, fire standpipes, branch lines and branch lines containing sprinklers when run in areas subject to freezing.

NFPA 13 (Standard for the Installation of Sprinkler Systems) allows Listed electrical heat tracing to freeze protect fire suppression systems including supply lines, standpipes and branch lines containing sprinklers.

XL-Trace Edge complies with UL 515A, CSA C22.2 No. 130- 03 and IEEE 515.1 requirements

■ XL-TRACE EDGE CUT-TO-LENGTH HEATING CABLE SYSTEM



Self-regulating heating cable with either fluoropolymer or polyolefin outer jacket for fire sprinkler freeze protection applications. The XL-Trace Edge system provides safe, reliable freeze protection of fire suppression systems.

- Same as above, except that fire panel communication listing requirements apply. All system must be “supervised” with controllers having alarm contacts connected to the fire control panel (Raychem 465 per UL 515A). See design guide.

PIPE FREEZE CONTROLLER SELECTION DETAILS

GOOD	BETTER	BEST
EC-TS <ul style="list-style-type: none">• Electronic thermostat• Ambient or line sensing• Adjustable set point of 30°F to 110°F• 25' thermistor sensor• 30 A at 100 - 277 V	465 (Fire Sprinkler) / 460 (Pipe Freeze) <ul style="list-style-type: none">• 5" color touch screen• Intuitive Programming• Auto-cycle• Built-in GFPD per UL 1053• High limit temperature cut-out	ACS-30 <ul style="list-style-type: none">• Multi-point electronic controller• 30-mA GFPD• Distributed power architecture• Multi-application control• Smart building control platform• Communication to BMS
ECW-GF <p>Electronic thermostat 30-mA GFPD Ambient or line sensing Adjustable set point of 32°F to 200°F 25' thermistor sensor 30 A at 100 - 277 V</p>	C910 <p>NEMA 4X outdoor rated 30-mA GFPD Auto-cycle Communication to BMS</p>	
	HTPG <p>Heat-tracing power distribution panel Dedicated power distribution, control, monitoring and alarm panel 30-mA GFPD per NEC</p>	

For complete specifications and other design assistance, refer to the appropriate data sheets and application design guides available on our website chemelex.com

Solutions that Make a Building Winter Safe

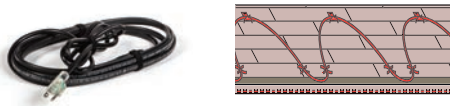
Roof & Gutter De-Icing – Residential / Light Commercial



Raychem roof & gutter de-icing systems protect roofs and gutters from ice dams, heavy snow build-up and icicles. The heating cable creates a continuous path for melted ice and snow to drain.

Our basic, reliable roof & gutter de-icing solution ranges from a simple preassembled plug-in kit to cut-to-length heating cables. These systems are ideal for residential or small commercial buildings in light to moderate snow load areas.

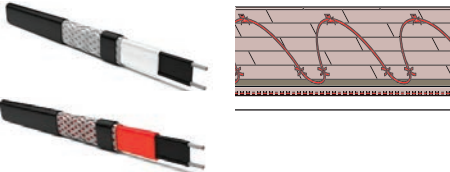
FROSTGUARD PREASSEMBLED PLUG-IN HEATING CABLE SYSTEM



Preassembled self-regulating heating cable with 6-ft cold lead and lighted plug for short standard or standing seam roof & gutter de-icing applications on porches and overhangs.

- Voltage: 120 V in lengths of 6, 12, 18, 24, 36, 50, 75 & 100 feet
- Components: Raychem H913/H914 roof clips, H915 downspout hanger

WINTERGARD WET PRE-PACKAGED IN STANDARD ROLL SIZES AND CUT-TO-LENGTH HEATING CABLE SYSTEM



Self-regulating heating cable that can be cut and spliced to fit the layout of any standard or standing seam roof line with gutters up to 6 inches wide. Choosing the H908 Plug-in cord eliminates the need to hardwire, thus reduces installation costs.

- Voltage: 120 V or 240 V
- Control and sensor options: PD-Pro and GF-Pro, LCD-8, Snow Owl, GIT-1
- Components: H900 hardwire or H908 plug-in power connection kit; H913/H914 roof clips; H915 downspout hanger; H910 Splice/Tee kit

ROOF & GUTTER CONTROLLER SELECTION DETAILS

GOOD	BETTER	BEST
EC-TS <ul style="list-style-type: none">• Electronic thermostat• Ambient or line sensing• Adjustable set point of 30°F to 110°F• 25' thermistor sensor• 30 A at 100 - 277 V	LCD-8 <ul style="list-style-type: none">• Moisture/temperature sensing controller• Aerial mounted sensor• Up to 5-hour hold time (adjustable)• Compatible with external contactors• 16 A at 120 V	PD-PRO & Snow Owl / GIT-1 <ul style="list-style-type: none">• Temperature and moisture sensing controller• Works w/ Snow Owl aerial and/or GIT-1 gutter snow sensors• Up to 8-hour hold time (adjustable)• LED lights to indicate power and heat cycle• Compatible with external contactors• 30 A at 100 - 277 V
		GF-PRO & Snow Owl / GIT-1 <ul style="list-style-type: none">• Temperature and moisture sensing controller• Built-in GFEP protection• Works w/ Snow Owl aerial and/or GIT-1 gutter snow sensors• Up to 8-hour hold time (adjustable)• LED lights to indicate power and heat cycle• 30 A at 100 - 277 V

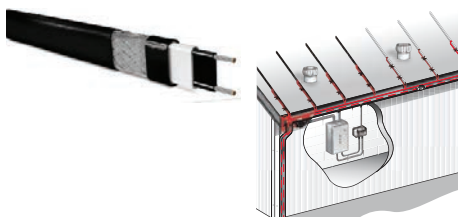
Solutions that Make a Building Winter Safe

Roof & Gutter De-Icing – Commercial / Specification



Raychem **roof & gutter de-icing systems** are advanced, high performing and often specified for buildings and offer reliable state-of-the-art connection kits and control systems. These systems are ideal for commercial buildings in light to heavy snow load areas.

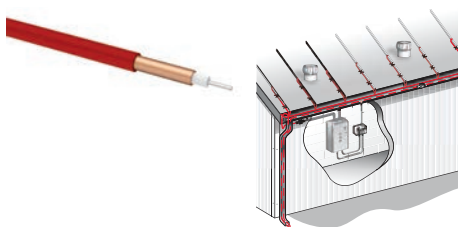
■ ICESTOP CUT-TO-LENGTH HEATING CABLE SYSTEM



Raychem IceStop self-regulating heating cable for standard or standing seam roof and gutter de-icing applications featuring a fluoropolymer outer jacket for superior abrasion and UV resistance, or a polyolefin jacket for less demanding applications.

- Voltage: 120 V or 208-277 V; Single-phase
- Control options: Single or multi-circuit, integrated power distribution, energy monitoring, BMS communications
- Components: RayClic quick connect; FTC heat shrinkable fittings

■ MI PRE-TERMINATED HEATING CABLE SYSTEM



Raychem copper sheathed or LSZH jacketed, mineral insulated heating cable for standing seam metal roof and gutter de-icing applications.

- Voltage: 120 V to 600 V; Single or 3-Phase design
- Control options: Single or multi-circuit, integrated power distribution, energy monitoring, BMS communications
- Components: Pre-terminated

ROOF & GUTTER CONTROLLER SELECTION DETAILS

GOOD	BETTER	BEST
EC-TS <ul style="list-style-type: none">• Electronic thermostat• Ambient or line sensing• Adjustable set point of 30°F to 110°F• 25' thermistor sensor• 30 A at 100 - 277 V	PD-PRO & GF PRO w/ Snow Owl / GIT-1 <ul style="list-style-type: none">• Temperature and moisture sensing controller• Works w/ Snow Owl aerial and/or GIT-1 gutter snow sensors• Up to 8-hour hold time (adjustable)• LED lights to indicate power and heat cycle• Compatible with external contactors• 30 A at 100 - 277 V• GF-PRO has built-in GFEP protection	ACS-30 <ul style="list-style-type: none">• Multi-point electronic controller• 30-mA GFPD• Distributed power architecture• Multi-application control• Smart building control platform• Communication to BMS
ECW-GF <ul style="list-style-type: none">• Electronic thermostat• 30-mA GFPD• Ambient or line sensing• Adjustable set point of 32°F to 200°F• 25' thermistor sensor• 30 A at 100 - 277 V	APS & SC-40 <ul style="list-style-type: none">• Temperature and moisture sensing controller• Multiple sensor types• BMS interface• Master/slave function• APS-4C has built-in GFEP protection; and works with SC-40 contactor	SMPG <ul style="list-style-type: none">• Heat-tracing power distribution panel• Dedicated power distribution, control, monitoring and alarm panel• 30-mA GFPD per NEC

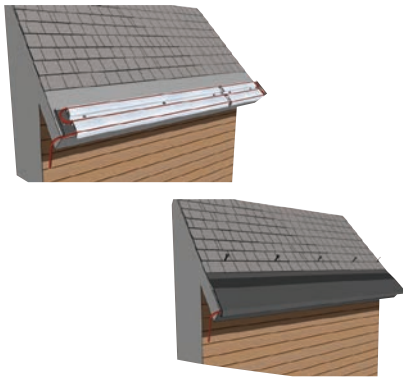
Solutions that Make a Building Winter Safe

Roof & Gutter De-Icing – Residential / Light Commercial & Commercial / Specification



Raychem **roof & gutter de-icing systems** are the premiere, highest performing, aesthetically elegant engineered systems with no visible cables. These systems are ideal for new construction or renovation of residential or commercial buildings in light to heavy snow load areas.

ROOF ICE MELT (RIM) PREMIERE CUSTOM ROOF ICE MELT PANEL SYSTEM



Raychem Roof Ice Melt (RIM) System is our premiere offering for roof and gutter de-icing in light to heavy snow load areas. The system consists of metallic panels that embed self-regulating heat tracing cable to provide high power output and an aesthetically pleasing roof de-icing solution. The RIM system includes panels specifically designed for eaves, valleys, channels, rakes and flat roof sections.

- For this custom solution, refer to the Roof and Gutter De-Icing Systems brochure (H81855) for details and an Estimate Form that serves as a basis for the design.

ROOF ICE MELT CONTROLLER SELECTION DETAILS

GOOD	BETTER	BEST
<ul style="list-style-type: none">• Electronic controller• Ambient sensing• Adjustable set point• 30 A at 100-277 V	<ul style="list-style-type: none">• Electronic controller with power distribution• 30-mA GFPD• High efficiency design with ambient and RIM sensing	<ul style="list-style-type: none">• Multi-point electronic controller• 30-mA GFPD• Distributed power architecture• Multi-application control• Smart building control platform• Communication to BMS

Solutions that Make a Building Winter Safe

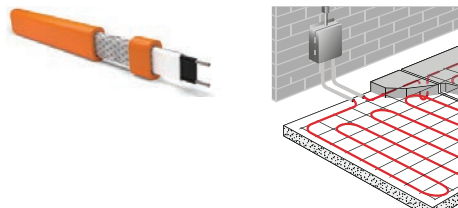
Surface Snow Melting – Residential & Commercial / Specification



Raychem **surface snow melting systems** keep ramps, access ways and footpaths free of snow and ice.

Our product range allows you to choose the right solution for your application and budget — from a self-regulating system for concrete surfaces and pavers that reduces heat output automatically as the pavement warms and is ideal for smaller areas, to an MI pre-terminated system for concrete, pavers, and asphalt which provides constant power output and is ideal for larger jobs.

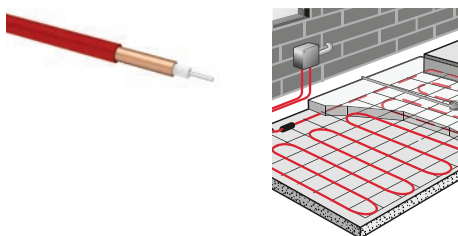
ELECTROMELT CUT-TO-LENGTH HEATING CABLE SYSTEM



Raychem ElectroMelt self-regulating heating cable for surface snow melting and anti-icing in concrete pavement.

- Voltage: 208 V; 240 V; 277 V
- Control options: Single or multi-circuit, integrated power distribution, energy monitoring, BMS communications
- Components: EMK heat shrinkable fittings

MI PRE-TERMINATED HEATING CABLE SYSTEM



LSZH jacketed copper sheathed heating cable for snow melting in concrete, mastic asphalt slab or road-grade asphalt slab.

- Voltage: 120 V to 600 V; Single or 3-Phase design
- Control options: Single or multi-circuit, integrated power distribution, energy monitoring, BMS communications
- Components: n/a

SURFACE SNOW MELTING CONTROLLER SELECTION DETAILS

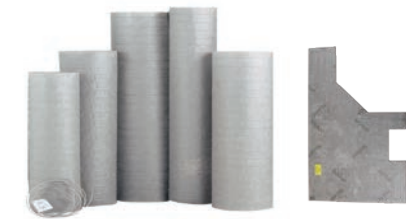
GOOD	BETTER	BEST
EC-TS <ul style="list-style-type: none"> • Mechanical thermostat • Ambient or line sensing • Adjustable set point of 30°F to 110°F • 25' thermistor sensor • 30 A at 100 - 277 V 	PD-PRO & GF PRO w/ Snow Owl / GIT-1 <ul style="list-style-type: none"> • Temperature and moisture sensing controller • Works w/ Snow Owl aerial and/or GIT-1 gutter snow sensors • Up to 8-hour hold time (adjustable) • LED lights to indicate power and heat cycle • Compatible with external contactors • 30 A at 100 - 277 V • GF-PRO has built-in GFEP protection 	ACS-30 <ul style="list-style-type: none"> • Multi-point electronic controller • 30-mA GFPD • Distributed power architecture • Multi-application control • Smart building control platform • Communication to BMS
ECW-GF <ul style="list-style-type: none"> • Electronic thermostat • 30-mA GFPD • Ambient or line sensing • Adjustable set point of 32°F to 200°F • 25' thermistor sensor • 30 A at 100 - 277 V 	APS & SC-40 <ul style="list-style-type: none"> • Temperature and moisture sensing controller • Multiple sensor types • BMS interface • Master/slave function • APS-4C has built-in GFEP protection; and works with SC-40 contactor 	SMPG <ul style="list-style-type: none"> • Heat-tracing power distribution panel • Dedicated power distribution, control, monitoring and alarm panel • 30-mA GFPD per NEC

Floor Heating – Residential & Commercial / Specification



Comfort is everything, especially in your home. With Nuheat **Electric Floor Heating Systems**, you can offer the comfort of a warm floor that is maintenance-free for your customers. Nuheat Electric Floor Heating Systems are ideal for both new construction or renovation projects.

CUSTOM AND STANDARD MATS



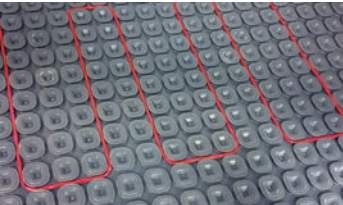
- The thinnest custom-built and pre-built electric floor heating mat. Designed to precisely fit any room.
- Available in over 70 standard off-the-shelf square and rectangular sizes
 - Custom Mats manufactured in only 3 days
 - 12 W/ft²; 41 BTUs (15 W/ft²; 51 BTUs also available upon request)

CABLE



- The robust floor heating cable solution. Perfect where on-site adjustments are required.
- Available in 33 sizes in both 120 and 240 V
 - Flexible wire spacing and heating output
 - May be installed at 12 W/ft² (41 BTUs), or 15 W/ft² (51 BTUs)

CABLE AND MEMBRANE



- The integrated electric floor heating and uncoupling solution. Membrane can reduce risk of tile cracks due to subfloor movement.
- Accommodates Nuheat Cable's thin cold lead splice and end seal with cutting or modification
 - Can replace a layer of subfloor
 - Flexible heat output (10, 12, 15 W/ft²)

THERMOSTATS

GOOD	BETTER	BEST	
Element	Home	Signature	Conductor
Basic on/off, up/down non-programmable thermostat	Fully programmable thermostat with color touchscreen	Wifi-enabled, fully programmable thermostat with color touchscreen and smart home integration	Wifi-enabled, fully programmable thermostat with vanishing, touch-sensitive display and smart home integration

For complete specifications and other design assistance, refer to the appropriate data sheets and application design guides available on our website chemelex.com



RAYCHEM SOLUTIONS PROTECT:

BUILDINGS

Raychem cable systems are made from the highest quality materials. They are UV-resistant and have a long lifespan. Burst pipes, damage to gutters and downspouts, hazardous snow-covered and slippery parking spaces, driveways and footpaths all become things of the past. Your gain? A safe living and working environment and lower maintenance costs.

PEOPLE

Because our systems prevent ice from forming and keep paths free from ice and snow and make them safely accessible, the risks of material damage and physical harm are kept to an absolute minimum.

BUDGETS

No accidents ultimately means a serious reduction in your financial risks (through claims for damages, higher insurance premiums, etc.) Thanks to the efficient operation of the cables and intelligent control, you also save a great deal of energy. Which is always very welcome during harsh winters.

For complete specifications and other design assistance, refer to the appropriate data sheets and application design guides available on our websites [chemelex.com](https://www.chemelex.com)

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Raychem Tracer Pyrotenax Nuheat