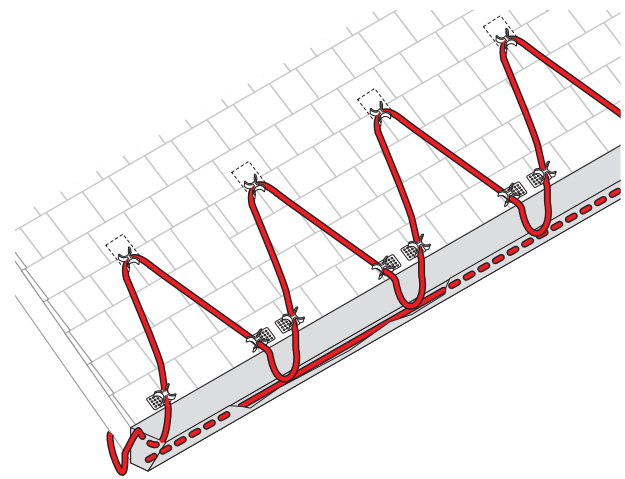
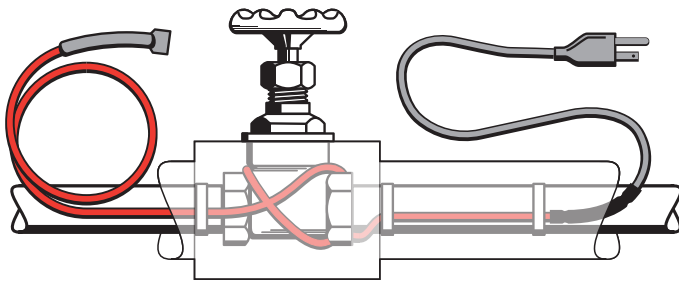


Raychem® Gardian™ pre-assembled self-regulating heating cables are designed for residential and commercial metal and plastic pipe freeze protection and roof and gutter de-icing applications. 120 V Gardian cables are available in 6, 12, 18, 24, 50, 75 and 100 foot lengths, and each

comes assembled with a 30-inch power cord and plug. 120 V Gardian cables are ideal for smaller jobs such as roof and gutter de-icing on porches and overhangs, as well as for pipe freeze protection on pipes up to 2-1/2 inches in diameter.

240 V is available in 6, 12, 18, and 24 foot lengths and each come assembled with a 30-inch power cord for terminating in a junction box. Due to their short lengths, 240 V Gardian cables are designed only for pipe freeze protection applications on pipes up to 2-1/2 inches in diameter.



Gardian Pre-assembled Heating Cable Specifications

Catalog number	W51-6P W51-12P W51-18P W51-24P W51-50P W51-75P W51-100P	W52-6L W52-12L W52-18L W52-24L
Service voltage	120 V	208-240 V
Application	pipe freeze protection and roof and gutter de-icing	pipe freeze protection
Power output on pipes at 40°F (W/ft)	6	6
Power output in ice or snow at 32°F (W/ft)	8	N/A
Maximum cable width (in)	0.45	0.45
Maximum cable thickness (in)	0.24	0.24
Maximum exposure temperature (°F)	150	150
Maximum bend radius	5/8" (16mm)	5/8" (16mm)

Approvals



718K Pipe Heating Cables
60J9 Residential and Mobile Home Pipe Heating Cables
877Z De-Icing and Snow Melting Equipment

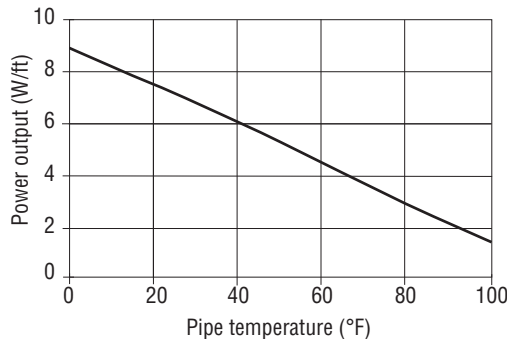


Desig. 3A, 3B, 3C, 2E, 3D

Ground-Fault Protection

To minimize the danger of fire from sustained electrical arcing if the heating cable is damaged or improperly installed, and to comply with the requirements of Tyco Thermal Controls and national electrical codes, 30-mA equipment or 5-mA personnel ground-fault protection must be used on each Gardian heating cable branch circuit. Arcing may not be stopped by conventional circuit protection.

Power Temperature Curve for Pipes



Product Selection

Pipe Freeze Protection

Use the tables to the right to select the correct heating cable length. Add 1 foot to the pipe length for each valve or spigot in the pipe system.

Table 1 Metal Pipes

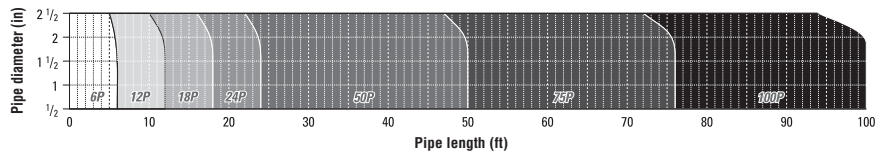
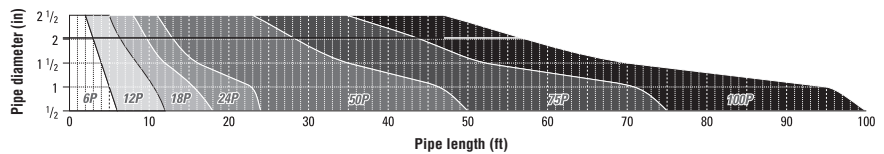


Table 2 Plastic Pipes



Add 1 foot to the pipe length for each valve or spigot in the pipe system.

Roof and Gutter De-icing

Use the table to the right to select the length of cable per foot of roof edge. Multiply by the total roof edge length and add the total gutter length and the total downspout length to determine the correct heating cable length.

Length of Cable Per Foot of Roof Edge (ft)

Eave Overhang (in)	Standard Roof ⁽¹⁾		Standing Seam Metal Roof: ⁽²⁾	
	Standard Roof ⁽¹⁾	Standing Seam Metal Roof: ⁽²⁾	18" Seam	24" Seam
None*	2	2.5	2	2
12"	2	2.8	2.4	2.4
24"	3	3.6	2.9	2.9
36"	4	4.3	3.6	3.6

* Gutter required

⁽¹⁾ For standard roofs, add 1 foot of heating cable for each foot of gutter and downspout.

⁽²⁾ For standing seam roofs, add 1 foot of heating cable for each foot of downspout.

For valleys, run the heating cable two thirds of the way up and down the valley.

World Wide Headquarters
Tyco Thermal Controls
 2415 Bay Road
 Redwood City, CA 94063-3032
 USA
 Tel (800) 545-6258
 Tel (650) 216-1526
 Fax (800) 527-5703
 Fax (650) 474-7711
 info@tycothermal.com
 www.tycothermal.com

Canada
Tyco Thermal Controls
 250 West St.
 Trenton, Ontario
 Canada K8V 5S2
 Tel (800) 545-6258
 Fax (800) 527-5703

Important: All information, including illustrations, is believed to be reliable. Users, however, should independently evaluate the suitability of each product for their particular application. Tyco Thermal Controls makes no warranties as to the accuracy or completeness of the information, and disclaims any liability regarding its use. Tyco Thermal Controls only obligations are those in the Tyco Thermal Controls Standard Terms and Conditions of Sale for this product, and in no case will Tyco Thermal Controls or its distributors be liable for any incidental, indirect, or consequential damages arising from the sale, resale, use, or misuse of the product. Specifications are subject to change without notice. In addition, Tyco Thermal Controls reserves the right to make changes—without notification to Buyer—to processing or materials that do not affect compliance with any applicable specification.

Tyco, Raychem and Gardian are trademarks or registered trademarks of Tyco Thermal Controls LLC or its affiliates.