Frostex®

Pipe Freeze Protection System

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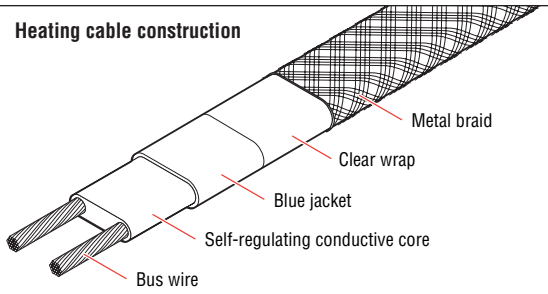
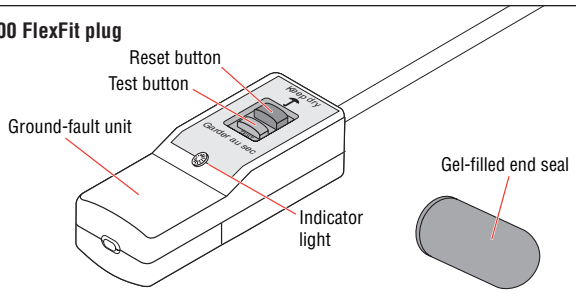
The Frostex® pipe freeze protection system is designed to freeze-protect dry or weather-proofed, insulated, aboveground residential water pipes. The heating cable uses a self-regulating conductive core that reacts to changes in temperature. As the environment becomes colder, cable resistance decreases to generate greater heat. Conversely as the environment warms, cable resistance increases to produce less heat. Therefore, every inch of pipe and valve consistently receives the amount of heat needed to prevent freezing.

Each heating cable circuit requires a Frostex 9800 FlexFit® plug kit. This kit must be used with braided Frostex heating cable. It is not compatible with, and should not be used with, earlier versions of Frostex that have no braid. Included in each kit is a specially designed ground-fault protected plug for connection to an electrical outlet and an end seal for sealing the cable end that does not plug in. A built-in power cord saves money by eliminating the need for additional heating cable from the pipe to the outlet.

Heating cable construction



9800 FlexFit plug



Frostex Heating Cable Specifications		Frostex 9800 FlexFit Plug Kit Specifications	
Service voltage	120 V	Plug rating	15 A, 120 V
Maximum circuit length	50 ft (15 m)	Fuse rating	10 A, 120 V
Thermal output at 50°F (10°C)	3 W/ft (10 W/m)	Ground-fault rating	27 mA
Weight per 100 ft (30 m)	4 lb (1.8 kg)	Cold lead	18 AWG, 3 wire, 30 in (762 mm)
Minimum installation temperature	0°F (–18°C)		
Nominal cable width	0.25 in (6.4 mm)		
Nominal cable thickness	0.15 in (3.8 mm)		
Bus wire (nickel/copper) gauge	22 AWG		
Braid wire (tin/copper) gauge equivalent	18 AWG		
Minimum jacket thickness	0.027 in (0.7 mm) modified polyolefin		

Approvals

UL LISTED 60J9
Residential and Mobile Home Pipe-Heating Cable

CSA

FM APPROVED

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, ground-fault equipment protection must be used on each heating cable branch circuit. Arcing may not be stopped by conventional circuit protection. The Frostex 9800 FlexFit plug kit meets this ground-fault protection requirement.

Graph 1 Nominal power output rating

This graph shows the self-regulating characteristics of Frostex heating cable. The conductive polymer core automatically adjusts its heat output as depicted in the graph at each point along the pipe, with no need for thermostats.

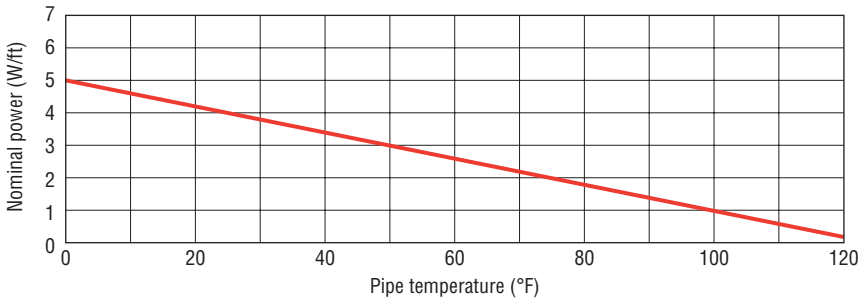


Table 1 Determine the amount of Frostex heating cable you will need

How much Frostex heating cable you need depends on your pipe material (metal or plastic), your pipe size (1/2" - 2"), the thickness of your insulation (1/2" - 1 1/2") and the lowest expected temperature (–40°F to 20°F). The table below will assist you in determining how many straight runs of cable you will need to protect your pipe. One run is equal to the length of the pipe. Frostex heating cable is designed to be run straight along the pipe, not spiraled.

Metal Pipe Insulation Thickness	Pipe Size	Lowest Expected Temperature			
		20°F (–10°C)	0°F (–20°C)	–20°F (–30°C)	–40°F (–40°C)
1/2"	1/2"	1	1	2	2
	3/4"	1	1	2	2
	1"	1	2	2	2
	1 1/4"	1	2	2	3
	1 1/2"	1	2	3	3
3/4"	1/2"	1	1	1	2
	3/4"	1	1	2	2
	1"	1	1	2	2
	1 1/4"	1	2	2	2
	1 1/2"	1	2	2	3
1"	3/4"	1	1	1	2
	1"	1	1	2	2
	1 1/4"	1	1	2	2
	1 1/2"	1	1	2	2
	2"	1	2	2	2
1 1/2"	3/4"	1	1	1	1
	1"	1	1	1	1
	1 1/4"	1	1	1	1
	1 1/2"	1	1	1	2
	2"	1	1	2	2

Plastic Pipe Insulation Thickness	Pipe Size	Lowest Expected Temperature			
		20°F (–10°C)	0°F (–20°C)	–20°F (–30°C)	–40°F (–40°C)
1/2"	1/2"	1	2	2	
	3/4"	1	2	2	3
	1"	1	2	3	3
	1 1/4"	2	2	3	
	1 1/2"	2	3	3	
3/4"	1/2"	1	2	2	2
	3/4"	1	2	2	3
	1"	1	2	2	3
	1 1/4"	1	2	3	3
	1 1/2"	2	3	3	
1"	3/4"	1	1	2	2
	1"	1	1	2	2
	1 1/4"	1	2	2	3
	1 1/2"	1	2	3	3
	2"	1	2	3	3
1 1/2"	3/4"	1	1	1	2
	1"	1	1	2	2
	1 1/4"	1	1	2	2
	1 1/2"	1	1	2	2
	2"	1	2	2	3

= Increase insulation thickness

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