

SELF-REGULATING HEATING CABLES

The CARAPACE system is manufactured with Heat-Line self-regulating heating cable technology. Self-regulating heating cables effectively increase heat and energy output to sections along its length that are cold and simultaneously reduces heat and energy output to sections that are warm. A CARAPACE system WILL NOT overheat, even when insulated. As a result, it is remarkably energy efficient and ideal for wet or dry pipe systems.

Self-regulating heating cable technology provides exceptional performance in the coldest climates, as heat is gently applied to prevent freezing. Not all self-regulating heating cables are created equal. Heat-Line self-regulating heating cable offers superior performance in demanding temperatures, consumes less energy, and is made in North America.



THERMOSTATS AND TIMERS

Thermostats and timers can be used to control the heating cable in an ON / OFF operation thereby reducing the amount of energy consumed. A control device combined with insulation substantially minimizes operational costs.

INSULATION

All Heat-Line self-regulating heating cables can be thermally insulated without the risk of overheating. A thermally insulated pipe is not as susceptible to freezing and erratic changes in the environment's temperature. Insulation creates greater thermal consistency throughout the pipe and increases the efficiency of the CARAPACE system. When the warmth generated by the heating cable is captured by insulation, the amount of energy consumed is greatly reduced.



Heat-Line offers a variety of insulation materials. It is recommended that all new or exposed pipes be insulated.

CARAPACE® AT A GLANCE

- cCSAus B137.1 Drinking Water NSF/ANSI 61 approved
- 5-year warranty with optional 10-year extended
- Can be fully insulated to decrease operating costs
- Can be used with a variety of control devices including thermostats and timers
- Will never melt or overheat, even if the pipe is dry
- Labor savings - no need to install heating cables on the pipe, excavate below the frost line, or blast rock
- Suitable for direct earth burial, above ground and/or wet locations
- Approved for high pressure and constant pressure systems, 200 PSI Rural and 250 PSI Municipal
- Available job-ready (factory-terminated) or cut-to-length for field termination
- Unique construction provides superior heat transfer

SPECIAL REQUIREMENTS

Since 1988, Heat-Line has been specializing in freeze protection of all types. If you have a special application of any kind, give us a call. Special system designs are common to us. We manufacture many other innovative products not mentioned in this brochure.



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CARAPACE®

Self-Regulating Heated Polyethylene Pipe for
Water Supply or Sewage Applications



ABOUT CARAPACE®

CARAPACE is a high-performance freeze protected potable water pipe constructed of virgin high-density polyethylene resins certified for potability, direct earth burial, and free air installations.

CARAPACE eliminates the manual fastening of heating cables to pipes. The integrated heating cable maintains direct contact with the pipe along its entire length, ensuring superior thermal heat transfer. Constructed from high-density polyethylene for strength and longevity, CARAPACE provides a cost-effective alternative to blasting and excavating in areas where natural frost protection is impractical.

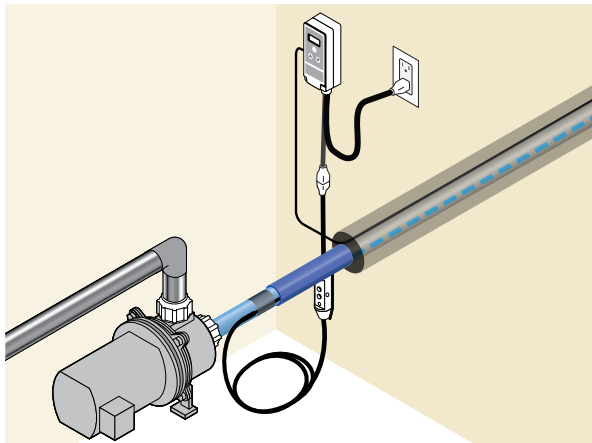
Proudly made and supported in North America, CARAPACE incorporates Heat-Line advanced self-regulating heating cable technology, which is known within the industry for superior performance, exceptional energy efficiency, and longevity.

APPLICATION

CARAPACE is designed to deliver high-performance, energy-efficient freeze protection for water pipes and sewage force mains. It is commonly used in long-length applications due to its ease of installation and ability to lower labour costs.

Application examples include but are not limited to:

- Long length water supply and effluent lines
- Municipal high pressure water supply and force mains
- Environments with rough terrain
- Residential water supply lines (lake, river, well, building to building, municipal)
- Commercial water supply and sewage force main



INSTALLATION

To install CARAPACE, simply roll out the pipe and connect using industry-standard plumbing fittings such as Philmac 3G Compression fittings supplied by Heat-Line.

The innovative design of CARAPACE streamlines the installation process, reducing labour and machinery idle time, ensuring contractors can proceed without delays.

CARAPACE is available either job-ready or cut-to-length.

CARAPACE Job-Ready

CARAPACE Job-Ready is ordered to length and is supplied installation-ready with a factory terminated self-regulating heating cable and power supply. To meet the needs of installers with different electrical connection requirements CARAPACE can be supplied as either a plug-in (GFC model) or hard wire (CS model).

CARAPACE Cut-To-Length

CARAPACE Cut-To-Length is sold by the foot and offered in reels up to 1000 feet. Since CARAPACE Cut-To-Length does not come factory terminated, power and end seal terminations must be performed by a licensed professional tradesperson.



CONSTRUCTION AND OPERATION

CARAPACE is constructed using 100% virgin high-density PE4710 resin certified to NSF-14 and 61 for high strength and potability. The self-regulating heating cable is extruded directly onto the outer surface of the pipe with a reinforcing layer of high-density polythene. The extruded layer provides a protective shell to guard against mechanical injury while ensuring the conductive self-regulating heating cable remains in unyielding contact with the pipe wall.

ORDERING GUIDE JOB-READY

Example: **CR2 - 5 - 125 - 100 - GFC**

Product	Nominal Power Output	Pipe Size	Cord-Set Type	Length of System
CR 120 V Rural CARAPACE	3 3 W/ft @ 50°F (10 W/m @ 10°C)	100 Pipe size 1" CR(2) ID, SIDR 9 200 psi	GFC Ground fault protected	<u>GFC</u> Ground Fault Protected
CR2 240 V Rural CARAPACE	5 5 W/ft @ 50°F (16 W/m @ 10°C)	CM2 OD, CTS SODR 9 250 psi	5-15 P 120 V / 6-15 P 240 V	<u>CS</u> Cord Connected (no GFCI)
CM2 240 V Municipal CARAPACE		125* Pipe size 1¼" CR(2) ID, SIDR 9 200 psi		
				Max length
				3 W/ft 120 V 270 ft
				5 W/ft 120 V 230 ft
				3 W/ft 240 V 550 ft
				5 W/ft 240 V 460 ft

ORDERING GUIDE CUT-TO-LENGTH

Example: **RHPE - 5 - 125**

Product	Nominal Power Output	Pipe Size
RHPE 120 V Rural CARAPACE	3 3 W/ft @ 50°F (10 W/m @ 10°C)	100 Pipe size 1" RHPE(2) ID, SIDR 9 200 psi
RHPE2 240 V Rural CARAPACE	5 5 W/ft @ 50°F (16 W/m @ 10°C)	MHPE2 OD, CTS SODR 9 250 psi
MHPE2 240 V Municipal CARAPACE		125* Pipe size 1¼" RHPE(2) ID, SIDR 9 200 psi

* Not available in CTS pipe size or 3 W/ft system

NOTE: For "CS" systems and Cut-To-Length systems, installers must provide 20 Amp circuits for circuit lengths greater than 550 ft for 3 W/ft CARAPACE and 460 ft for 5 W/ft CARAPACE.