

Electrical Resistance Heating Tape — Adhesive Backed

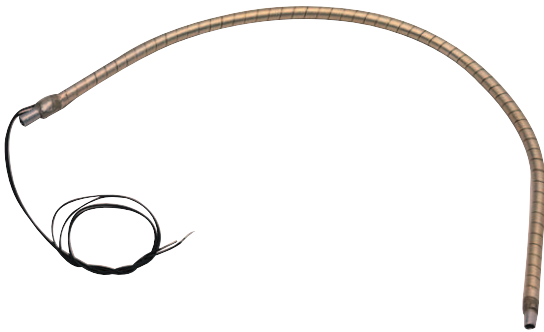
Designed For High Heat Transfer

All electrical resistance elements create heat, but some systems are better at transferring this energy. The secret to this heating tape is in its thermally conductive adhesive and its outer reflective sheath.

The adhesive surrounds the resistance wire and transfers the thermal energy directly to the surface of the load. The resistance wire itself has a back and forth kink that acts as a spring to absorb expansion and contraction.

The outer aluminum sheath spreads heat evenly over the entire surface of the tape and also reflects heat back onto the load.

The end result is a highly efficient heating source with maximum heat being transferred to the desired material.



Typical Applications

- ➔ Cylinder wrap ideal for tubes, pipes or vessels.
- ➔ Placed directly on PVC, PTFE plastic pipe without the need for other material.
- ➔ Excellent for prototype engineering, placing heat exactly where it is needed.
- ➔ Even heating throughout the length of a heated hose for hot wax handling, food processing, hot melt and other plastic processing.
- ➔ De-fogging, de-icing, fuel line warming.
- ➔ Acrylic product approved by NASA for space flight.
- ➔ Acrylic low outgassing perfect for vacuum applications.

Product Types

4 Conductor Tape 1/2" (12.7 mm) wide; has the highest watt density and the most variety of resistances. It can have leads at one end in the case of a series connection or a series/parallel connection, or leads at either end in a parallel connection.

The tightest wrap this tape can achieve is on a 1/4" (6.3 mm) O.D. surface. A smaller tube should be wrapped with 1/4" (6.3 mm) or 1/6" (4.2 mm) tape.

2 Conductor Tape 1/4" (6.3 mm) wide; has leads on one end in the series connection, and leads at both ends for parallel connections. This tape will wrap down to 1/8" (3.17 mm) O.D.

1 Conductor Tape 1/6" (4.2 mm) wide; can wrap down to .060" (1.52 mm) O.D. A lead will be present at both ends.



Typical finished assembly with leads.

ADHESIVE SPECIFICATIONS

	Silicone	Acrylic
Operating Temperature Range	-100°C to 250°C -148°F to 482°F	-40°C to 150°C -40°F to 302°F
Outgassing... TML/VCM	1.047%/.322%	1.0%/.10%
Adhesion to Etched Aluminum (oz/inch width)	28 @ +125°C 450 @ -100°C	15 @ +125°C 50 @ -100°C
Overall Thickness Applied	.025" (.63 mm)	.028" (.71 mm)
Dielectric Strength	600 Vdc	600 Vdc

General Purpose Wattage Calculations for Tube and Pipe Heating

$$T_p = P \times L \times \Delta T$$

T_p = Total Watts Required

P = Watts per lineal foot of tube per °F temp. rise (see chart below)

L = Length of tube in feet

ΔT = Temperature rise, °F above ambient

To Find P: Look at the intersection of Tube O.D. and Insulation thickness.

Insulation Thickness	Tube Outside Diameter			
	1/4"	1/2"	1"	2"
Bare	.10	.13	.21	.40
1/2"	.07	.09	.13	.20
1"	—	.05	.08	.11



Note: This is for estimating power requirements only. Confirmation by prototype testing is recommended.

- If the temperature rise is over 100 degrees, increase the wattage by 10%.
- For rapid start-up and to allow for colder material entering the hose, increase the wattage by 25% and use a temperature controller with a temperature sensor.

Warning !! FTP Heat Tape is essentially resistance wire in a mountable high temperature adhesive backed tape. In order to be used properly, the heater design must be done and the math worked out, following the example provided.