

TYPES OF ELECTRICAL HEATING CABLES

Cables that are used in Electrical Heat Tracing applications can be divided into two categories.

- Constant Power Cables
- Self-Regulating Cables (Self-Limiting Cables)



a) Constant Power Cables:

The fundamental feature of this kind of cables is that they give constant energy in every each meter lenght. In applications with these cables, temperature is kept under control via temperature controllers. These cables are preferred in high temperature applications. In these applications, one should be extremely cautious not to overlap the cables. The cables should not be in touch. Or else, these cables can burnout. This group of cables is divided into two:

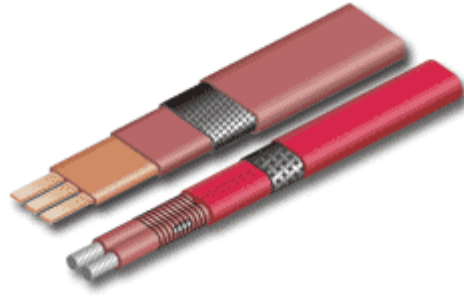
- Series Resistance Cables

These cables can have single or triple core and they are made of resistances connected serially. They are used to feed long lines from one feeder. The cost is relatively small. One of the most crucial disadvantage is that the cable lenghts are produced for the specific application and it is not possible to shorten or extend the cable. A failure in any spot on the cable causes the whole cable to malfunction.



- Paralel Resistance Cables

With two cores, these cables have a resistance wire wrapped around, and they have resistances of 1 meter lenght all connected parallelly. The cable can be cut to lenght. But there will be a cold lead of maximum 1 meter. In case of a failure in any spot, only the 1 meter resistance that has the failure spot does not work, rest of the cable works properly. Addition can be made. They are preferred in high temperature applications where self-regulating cables cannot be used.



b) Self Regulating Cables:

With the semi-conductor structure, these cables get less current with increasing temperature and they emit less heat. As the temperature drops, the current rises. This physical phenomenon happens due to the resistance of semi-conductor matrix, increasing with increasing temperature. Due to this fact cables are “self-regulating” themselves. This causes the temperature controllers to be redundant. Self-regulating cables are the latest technology in Electrical Heat Tracing.

