USE OF HEAT TRACE TAPES WITH K-FLEX ELASTOMERIC INSULATION

Most heat trace tapes designed for residential use have a maximum operating temperature of 180°F and are acceptable for use with K-Flex Insul-Tube and Insul-Tube DS elastomeric insulations. Only *self-regulating* heat trace tapes should be used with elastomeric insulation. As most heat trace tapes are used outside the building envelope, alternative insulation materials can be used if the maximum operating temperature exceeds 180°F. K-Flex HT is an EPDM based product that has an upper temperature limit of 300°F and is ASTM E84 25/50 rated to 1 inch wall thickness. Due to the higher operating temperatures, the HT product should be installed using K-Flex 420 adhesive on longitudinal seams and butt joints. Consult heat tape manufacturer to be sure the operating temperature will not exceed the maximum limit of the insulation. Foam tapes should not be used with heat trace tapes / systems.

Sizing Insulation Inside Diameter To Prevent Seam Failures

The most common thickness for heat trace tape is 1/4" and will require that the insulation inside diameter is sized properly to fit over both pipe and tape. If this is not taken into consideration, the longitudinal seam could experience excessive stress, resulting in the failure of the longitudinal seams. Technical Bulletin TA 43 provides actual ODs for piping systems and the pipe insulation manufacturing tolerances can be found on our website at http://www.kflexusa.com/downloads/Product%20Specifications/Rubber%20Tube.pdf

Designing The Insulation/Heat Trace System

The heat loss through the insulation wall must be balanced with the heat gain provided by the heat trace tape to prevent the system temperature from escalating beyond 210°F.

Typical heat trace tapes wattages (per lineal foot):

3 Watt
5 Watt
8 Watt
10 Watt

where: 1 Watt = 3.4121 Btu/hr

Though the heat loss / heat gain calculations seem simple, they can be complicated by the pipe and ambient temperatures. This, in turn, can affect both the selected heat trace tape wattage and the thermal conductivity of the insulation. While basic calculations can be made using the IsoCalc program available for download from the K-Flex USA website (www.kflexusa.com), it is recommended that a qualified engineer perform the calculations for commercial heat trace systems applications.

The use of K-Flex elastomeric insulation over heat trace tape greatly improves the performance and efficiency of the heat trace tape system.