FIRESTOPPING AND K-FLEX PE POLYETHYLENE INSULATION

Building codes require firestopping wherever piping penetrates a fire rated floor, ceiling or wall. Since most holes are drilled or cut oversized, firestopping is used to fill the gap, or "annular space" between the penetrating item and the edges of the floor, ceiling or wall.

There are four components to a firestop fire rating. There is an F rating, which demonstrates the ability to prevent the passage of flame through the opening. The T rating indicates the ability of the firestop system to limit the temperature increase on the non-fire side of the floor, ceiling or wall. The most recent components are the L or W ratings. The L or "leakage" rating is a measure of the systems ability to prevent the passage of hot and potentially toxic gasses. The W or "water" rating indicates the ability of the firestop system to prevent water from penetrating through the assembly. Firestop F and T ratings are expressed in terms of time, with ratings ranging from 15 minutes to 4 hours.

Firestopping approvals, like those listed in the Underwriters Laboratories, Inc. (ULI) Fire Resistance Directory are very specific to the floor, ceiling and wall construction, the size of the opening, the type, size and number of pipes penetrating the opening, as well as the size of the annular space and the spacing between pipes when there is more than one penetrating item. Firestop ratings are also very specific to the type and thickness of insulation used on these pipes.

K-Flex PE polyethylene insulation products are *not* acceptable for use in firestopping designs listed in the ULI Fire Resistance Directory unless those designs specify that the firestop material is installed directly to the pipe, i.e. the insulation does not pass through the opening.

In the ULI directory, elastomeric insulation products are listed as "Tube Insulation – Plastics". Products acceptable for use must be ULI listed in Category QMFZ2 of the Plastics Recognized Components Directory (our products are listed under file number E300774). The ULI firestopping designs require the insulation composition to be "acrylonitrile butadiene rubber / polyvinyl chloride (AB/PVC)", which is synonymous with NBR/PVC composition of our products or EPDM rubber. *There are no firestop designs where polyethylene based insulation materials are installed in the annular space.* The reason for this is that the polyethylene (or any other thermoplastic insulation) will melt before the intumescent firestop material is (heat) activated, resulting in an opening through which flame and hot gases can pass.

When an appropriate firestopping system is not available with polyethylene insulation, another insulation material such as fiberglass insulation can be used for a short length where a *metallic* pipe passes through the opening. This allows for the selection of a firestopping design based on the selected insulation material. The use of fiberglass is not recommended on any systems where condensation is a concern. The firestop rating would probably be limited to an F rating as the polyethylene insulation would melt, subjecting the pipe to higher temperatures than would be encountered using a thermally stable insulation.

All firestop applications are subject to review and approval by the local code enforcement office.

K-Flex USA insulation products are only one component of an approved firestopping system, and do not have an hourly fire rating independent of the other components of the system. For more information on firestopping systems, consult the UL Fire Resistance Directory or the manufacturers of firestopping materials listed above.