PWPipe

TECHNICAL BULLETIN

DESIGN **TB-S5**

February 2000

FIRE PENETRATIONS AND FIRESTOPS

CODES AND FIRE SAFETY

For most locations, requirements for fire safety are found in the local building codes. In most of PWPipe's markets, the code that is used is the UBC (Uniform Building Code).

FIRE DEFINITIONS

- **FIRE RATING:** Based on the construction materials and methods used, every building is classified by the local Building Official into one of nine types of construction. Each type of Construction classification carries a fire rating, which represents the resistance of the construction to the spread of fire.

- **FIRE PENETRATION:** A "fire penetration" is any break in the continuity of fire-rated construction. For piping purposes, a penetration occurs whenever pipe passes through or into a wall or ceiling.

FIRESTOP: A "firestop" is a material or device that seals a fire penetration so that the fire rating is maintained. A variety of firestopping techniques and devices have been developed which allow PVC pipes to be installed in fire-resistant assemblies.

CODES AND PVC PIPE

PVC pipe and conduit installations are controlled by three different codes:

- **PLUMBING CODE**: The Plumbing Code regulates the types of PVC pipe and fittings used for plumbing systems:
  Cold water pipe
  DWV pipe

- **ELECTRICAL CODE**: The Electrical Code covers the types of PVC conduit and fittings used for electrical systems.
  UL conduit
  UL fittings
  ENT

- **BUILDING CODE**: The UBC does not directly regulate pipe. However, the Building Code does define fire-performance requirements. For this reason, all pipe-related fire penetrations and firestops do fall under the jurisdiction of the Building Code.

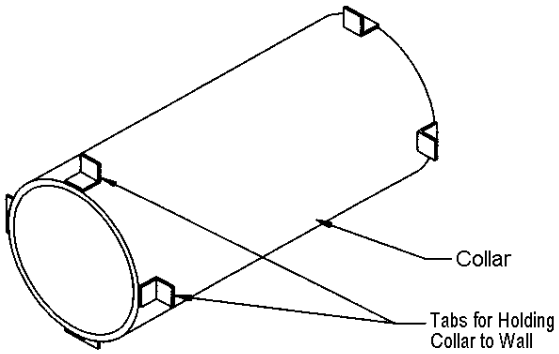
Some state and local codes make amendments to the national codes. It is very important to check with local code officials for all PVC pipe and conduit projects.

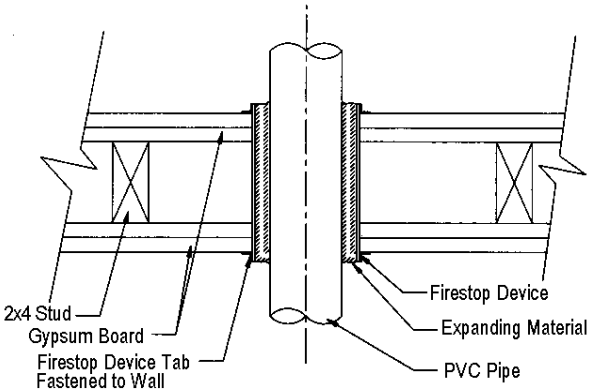
FIRESTOPS: PVC pipe and conduit can be used in buildings as long as the fire rating of the structure is maintained (assuming that the local codes approve PVC).

The fire rating of the building is maintained through the use of an approved firestopping material or device. For plastic pipe, a typical firestop device contains materials that expand when exposed to high temperatures. These expanding materials close off the penetration and prevent fire from spreading to adjacent areas. This closure maintains the fire rating.

An example of a typical firestop device is shown below:

Description: The device is a tube that passes through an interior wall of a building and is fastened to both sides of the wall. The pipe fits inside the tube, and the space between pipe and tube is filled with expanding material. The sketch shows the device protecting a penetration through a wood-stud wall covered with two layers of gypsum board each side.





NOTE: Information concerning firestopping devices and materials should be obtained from the manufacturers of the devices and materials. Information may be obtained from:

International Protective Coatings Corp.
725 Carol Avenue
Oakhurst, NJ 07755
Phone: (800) 334-8796

The RectorSeal Corporation
2830 Produce Row
Houston, TX 77023-5822
Phone: (800) 231-3345

Names of firestop manufacturers are provided for information only. PWPipe does not recommend or endorse any particular firestopping material, device, or manufacturer.

WARNING: In all cases, consult the appropriate local building officials concerning specific requirements for PVC pipe within their jurisdictions.
