



FIRESTOP 101: An Introduction to Firestopping

Firestopping of penetrations through fire-resistive construction greatly increases life safety of occupants and protection of property.

Role of Firestopping

What is Firestopping?

“Process whereby certain materials, some of them specially manufactured, are used to resist (or stop) the spread of fire and its byproducts through openings made to accommodate penetrations in fire-rated walls, floors and floor/ceiling assemblies.”... International Firestop Council

Why is Firestopping Important?

Containing smoke, toxic gases and fire is a critical aspect of fire protection. Smoke and toxic gases are the leading killer in fires. Approximately 57% of people killed in fires are not in the room of the fire origin and 3/4 of all fire deaths are caused by smoke inhalation.

Where is Firestopping Used?

The spread of fire can be restricted by dividing a building into separate compartments with fire-resisting walls and floors, thereby increasing the availability of escape routes for occupants. Areas where containment often breaks down and fire/smoke is allowed to spread when not firestopped properly:

Joints-

- **Top-of-Wall (Head of Wall)**
- **Curtain Wall (Edge of slab)**
- **Wall-to-Wall**
- **Floor-to-Floor**

Penetrations-

- **Plumbing (steel, copper, conduit, plastic)**
- **Electrical/Communication Cables**
- **HVAC Ducts**

Other-

- **Fire-rated Doors**
- **Fire-rated Glass**

Firestopping Product Details

How do Firestop Products Work?

Through-penetration firestop products work by filling the voids around penetrating items in fire-rated walls and floors. Some firestop products intumesce or expand in the presence of heat. The intumescent action seals and stops the spread of flames and smoke to other floors and rooms for penetrations that melt or change shape in a fire (eg. Plastic piping).

What are Typical Firestop Products?

One-part Sealants (Caulks), Putty, Cementitious Mortars and Grouts, Sprays (Coatings), Intumescent Wraps, Pillows/Bags/Blocks, Mechanical Devices.

Why isn't Drywall Tape Listed?

Tape and Mud will not withstand the effects of fire. Depending on fire conditions, the tape and mud may burn away leaving an unsealed opening in just minutes. A Firestop Sealant will restore an assembly to its Fire Resistance Rating.

Building Codes

Model Codes That Required Firestop: International Building Code (IBC), Life Safety Code (NFPA-101), National Electrical Code (NFPA-70), National Building Code (NFPA-5000), Legacy US building codes (UBC, SBC, NBC)