INSPECTION OF INSTALLED FIRESTOPS

INTRODUCTION

Building codes and NFPA 221 *Standard for High Challenge Fire Walls, Fire Walls, and Fire Barrier Walls* require openings in fire walls and fire barrier walls to be protected with listed penetration firestop system or device. The building code also requires floor/ceiling assemblies that have openings be protected with firestop systems or devices. If the fire stop is not properly installed, fire and smoke can pass through the wall or ceiling and spread the fire to the next fire area. These openings include openings for:

- Piping, both plastic and metal
- Tubes, both plastic and metal
- Cables
- Cable trays
- Vents
- Ducts

The listed system and device tested to ASTM E814 *Fire Tests of Penetration Firestops* will have two ratings, “F” and “T” while systems and devices listed to UL 1479 *Fire Tests of Penetration Firestops* can have up to four ratings, “F”, “T”, “L” and “W.” The “F” rating is for the flame passage through the system. The rating also requires the system or device to have passed the hose-stream test. The “T” rating is for the flame passage through the system and requires the maximum temperature rise on the unexposed surface of the wall or floor assembly, on the penetrating item and on the fill material not to exceed 325°F (181°C) above ambient. It also requires the system or device to have passed the hose-stream test. The “L” rating is for the amount of air leakage, in $ft^3/min/ft^2$ of opening (CFM/ft^2, $L^3/min/m^2$) or in ft^3/min (L^3/min) per unit for fixed-size opening units, through the firestop system at ambient and/or 400°F (204°C) air temperatures at an air-pressure differential of 0.30 in. W.C (74 Pa). The “W” rating determines the capability of the firestop system to maintain watertightness of the penetration through a floor or wall construction at ambient air conditions under 3 ft of water pressure head (1.3 psi, 9 kPa) for a period of 72 hr.

POSITION

Inspector

The person conducting the inspection of the firestop system or device should be a separate third party who is qualified to perform the inspections. The person or firm should not be a competitor of the installer, contractor, manufacturer, or supplier of any material being inspected.

Process

The contractor should give the inspector all documentation (cut-sheets, installation instructions, drawings, etc.) early enough so that the inspector can review the installation(s). The inspector should review the documentation to determine if they have all the information needed to conduct the inspection(s) and if the system or device being installed has been tested to ASTM E814 or UL 1479 and listed for that purpose. The contractor should give the inspector plenty of time before the anticipated start of the installation so they can schedule a pre-installation visit if necessary. The contractor should also give a time line as to when the product comes on site, the anticipated starting and completion dates.

The inspector should visit the site just prior to the installation to verify the wall or floor is in proper condition for the installation and that all the material for the installation is on site. They should also visit the site as the during the installation to verify the installation is be installed per the manufacture's specifications. Once completed, the inspector should verify the installation in installed per the manufacture's specifications and if necessary take measurements to confirm. The inspector should then prepare a report.

Report

The report should contain the following:

- The name of the project, and location
- The name and address of the inspector
- The name and address of the installer
- The prime contractor of the project
- Types, quantity, and location of each firestop system or device inspected
- Which verification method was used to ascertain compliance
- The summary page listing percentages of deficiencies for each type of firestop system or device
- A total number of deficiencies as a percentage of the total number of firestop systems inspected.

The final report shall also contain copies of all inspection forms used during the inspection process.