The art of sealing penetration in fire-rated partitions has come a long way in the past few years. Awareness of sealing penetrations in fire-rated walls and floors is growing faster than ever. Building code language is stronger as well as enforcement of these building codes. The installer is left with the task of sealing penetrations that will be subjected to the approval of the authority having jurisdiction, which is usually the building inspector.

A number of applications have been installed improperly. This normally leads to the additional cost of the contractor removing the mis-applied product and re-installing products that have been approved for use for the application for which the products have been tested. There are a number of considerations the installer must be aware of before making a decision as to what product is the right product in order to meet the requirements of the local building codes and the local inspector.

Consider All the Facts

There are 11 basic questions a contractor should ask before making a product decision:

- What type of barrier being penetrated? Wall or floor?
- What is the thickness of the barrier?
- What is the barrier construction (concrete, gypsum)?
- What is the fire rating of the barrier (one-, two-, three-, and four-hour)?
- What is the penetration item (cable, pipe, conduit, etc.)?
- What is the type of penetration item (plastic, steel, copper, etc.)?
- What is the size of the penetrating item, and how many of each are there?
- What is the type and thickness of the insulation (if any)?
- What is the shape of the opening?
- What is the size of the opening?
- What is the annular space between penetrating item and inside wall of the penetration.

Once these questions have been answered, the installer is prepared to decide which material is suitable for the given applications.

Qualifying for the Test ...

If One Exists

As the 11 questions imply, no blanket tests for classification for all penetrations exist. Each application has to be tested before it is classified. Therefore, the installer should ensure that the manufacturer has a test for the application for which the products are being installed. These qualified tests are frequently called “systems” due to the fact that the

Purchasing the Right Firestopping Products for the Application

Will the Product You’ve Chosen Pass the Test? ...

Is There a Test?

By Gerald K. Thomas
product alone does not necessarily qualify as a system on a stand-alone basis. All the factors covered in the 11 questions are included in the description of a qualified system.

The most recognized qualifying test laboratory is Underwriters Laboratory, but there are several approved laboratories in the country that test to the ASTM E 814 standards that are the standards for firestopping in the United States. The contractor should accept only products that have been tested for the application for which the product has been tested.

What If There Is No Qualified Test?

There are occasions where there are no qualified tests for a given application. If this is the case, the installer should obtain an engineering judgment from the manufacturer. Engineering judgments should be based on an application for which the manufacturer has a qualified test. If this engineering does not resemble any test that the manufacturer has qualified at an independent, third-party laboratory, the installer should find another manufacturer that has a qualified system or at least an engineered judgment that closely resembles a qualified system. It is also recommended that the installer require that all engineered judgments reference the name of the project on the drawing of the judgment.

All engineered judgments should be submitted to the authority having jurisdiction before any material is installed. This will eliminate the possibility of the contractor having to remove material because of the local building inspector or fire marshall did not accept the engineering judgment.

Other considerations include the ability for the material to resist moisture and the ability of the material to withstand movement. Withstanding movement is becoming more prevalent in expansion joints and curtain wall joints applications. These joints are subjected to movement which renders most firestopping materials as ineffective.

Do It Right

Firestopping is a very important part of the overall fire protection system in a building. Properly installed firestop systems will save lives, protect property and allow for the continuity of operations.

Firestopping products that are not installed properly defeat the overall purpose of firestopping. The contractor should ensure that the products are classified by an independent test laboratory for the application for which it is being used. Ensuring that the proper firestop materials are being installed properly will eliminate problems with enforcement officials as well as reduce the contractor’s exposure to liability.

About the Author

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