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## Cable Tray Penetrations - Stop It! By Mike Tobias Sr.

I am on a mission. With 25 years in the cabling business, I have seen a lot. About 5 years ago I got in to the firestopping business and had the exciting opportunity to develop some mechanical penetration systems for cable installers. Along the way, during the development of these systems, I was amazed by some of the penetrations encountered in commercial buildings, schools and hospitals. Consistently, the most difficult fire stop issue was always the CABLE TRAY. It seemed to run continuously through fire rated barriers with reckless abandon. The holes created by passing the tray through the wall or floor varied in size and shape. It was as if a different person planned and executed each and every hole, even in the same building, on the same floor. I thought "what's up with this"? There was no method to the madness. It was decided that the cable tray penetrations were going to be too tough to handle as far as a unique solution and the decision was made to abandon R & D on this type of penetration. For the next three years our company developed split sleeves for retrofitting penetration violations and Penetrators for new installations. The systems are the accumulation of ideas and solutions from the cable installer's perspective. All were well received by the cabling industry. But what about those pesky cable tray penetrations? The issue troubled me. Why? This was the first thing you asked when faced with a problem. Why did the Builder or Contractor make those huge rectangular holes in the fire rated barriers? Why did the same Builder or Contractor panic when it was time to occupy the building and none of the cabling people had fire stopped the cable tray? Why did the building's owner not only pay extra to get these penetrations fire stopped, he assumed a mechanical method that is inadequate and will need to be retrofitted every time a new cable is pulled or removed from that cable tray?

Firestopping employs methods that are tested and classified in the amount of time before a fire will pass through a rated barrier. The cable tray industry has managed to side step firestop issues by just saying and doing "nothing". The average architect or engineer will spec a cable tray and leave it up to the contractor to install it with no reference to firestopping. It is a little known fact that there are no proactive cable tray penetrations for trays to go through a fire barrier. In other words, the

cable tray manufacturer did not go to UL or ETL and say "test this tray penetration for 2 hours, make the hole this size, and use these pillows, compressed this amount". Instead, they left it to the end user to retrofit whatever they ended up with. Those large holes will be a nightmare for the life of the building. Maintaining them will be expensive and time consuming. In many areas on the west coast, there are seismic considerations when a cable tray is passed through a fire wall. If a cable tray is rigidly routed through a fire barrier, and an earth quake occurs, the seal will be broken and the firestop material will be dislodged. The result is that a fire will race through a wall that is specifically designed to stop fire.

Those in the building industry that are a party to this should STOP IT! A simple and effective solution would be "Sleeve Systems". Cable trays should be stopped a few feet short of the fire barrier, a sleeve installed, and the tray picked up again on the other side of the barrier. Sleeve Systems are simply methods of containment for the expansion of the intumescent material. The sleeves can be fire stopped to match the rating of the barrier. A series of small holes is always easier to deal with than one large hole. Cable trays requiring a ground can run a ground wire through a one inch sleeve to isolate it from the communications cables.

Firestop companies have contributed to the ambiguity involved in these penetrations for years. Their Reps in the field will tell a builder/contractor to make the hole as big as they want, they will gladly sell you pillows, putty, caulk and chicken wire for the life of a building. Major firestop companies do cabling as a sideline. Their mainstay is in the duct work, pipes, seals and wall to floor junctions. They are in the business to make money for their company. If the construction industry wants to throw money at them because we have no standards or even methods for dealing with cable tray penetrations, then so be it.

Any of you reading this article with any time out in the field know what I am talking about. Yes, it is too late to do anything about those barriers out there that have cable trays plowed through them. However, we can educate ourselves and be a part of the solution and not part of the problem. Acquire firestop training and establish a standard operating procedure for fire barrier penetration. If you are involved in the placement of cable tray, STOP IT.

We have just developed a system that overcomes all the pitfalls referenced in this technical finding. Visit [www.uniquefirestop.com](http://www.uniquefirestop.com) and look for a new product, "Future Proof Plates" (FPP's).

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