

Standardizing Firestop System Movement Certification to Improve Building Safety



Stopping the spread of fire is crucial to reduce the risk of injury or damage in buildings. Firestop systems, which close the openings in fire rated barriers, i.e. interior walls or floors, created by penetrants, such as plumbing, communication or wiring, are an important element in achieving the goal of limiting risk and damage from a fire event. The proper implementation of a tested and certified firestop systems is also mandated by the International Building Code and other similar codes, and many construction specifications around the world.

Over time, movement from seismic activity, thermal cycling, water hammer and human impact may affect the position of the penetrant and consequentially, the firestop system. When elements of construction move, either during installation or after, they may adjust to a point where they may not sufficiently stop a fire. The question is to determine at which point a firestop system is no longer able to perform

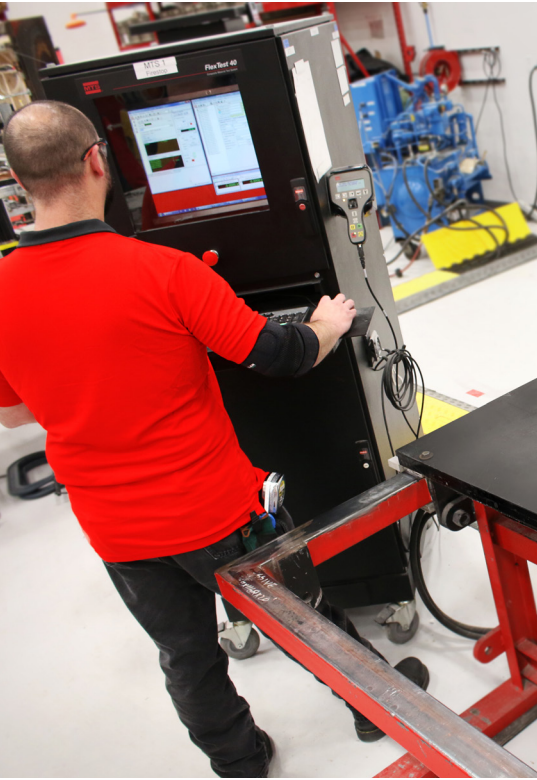
as intended (and as certified) if it experiences movement. Without a consistent test methodology for evaluating a movement and fire condition, firestop system manufacturers were left without a clear way to demonstrate their product or system still meets the intent of UL 1479, the Standard for Fire Tests of Penetration Firestops, and the International Building Code. Hilti, a multinational company that develops, manufactures, and markets products for the construction, building maintenance, energy and manufacturing industries, was in the right position for action.

UL's and the firestop industry's response

UL, along with several additional manufacturers, had worked as part of a team to develop ASTM E3037-16: Standard Test Method for Measuring Relative Movement Capabilities of Through-Penetration Firestop Systems, to help evaluate the performance of firestop products and systems after exposure to cyclic movement. Upon the results learned



CASE STUDY



Images courtesy of Hilti, Inc.

from our previous work, the team developed a new UL Certification program to quantify and publish the firestop systems ability to accommodate movement and still meet the fire protection requirements of UL 1479.

According to Ed Goldhammer, Hilti's Director for Codes and Approvals, the collaboration with UL and the industry stakeholders to adopt the firestop movement test method and create an associated Certification program was a natural fit. "UL is the industry leader with an already established firestop certification program. It made sense for this movement certification to be included within the existing firestop system design," Goldhammer said. Certification program development was driven by user requirements where regulatory requirements do not yet exist. UL and Hilti developed a firestop movement certification scheme by soliciting feedback from end users like architects and engineers across the United States.

Impact

In the absence of current regulatory codes or standards that address firestop movement, UL's Firestop Movement Certification can offer firestop manufacturers a way to demonstrate the effectiveness of their firestop products based on exposure to cyclic movement and a UL 1479 fire test evaluation. With data in hand, manufacturers can show code authorities, contractors, insurance underwriters, building

owners, architects and designers that specific firestop systems are able to accommodate a certain amount of movement. Additionally, the UL firestop movement Certification program will allow manufacturers to address design challenges where firestop movement is required via construction specification or other similar requirement(s).

Hilti is the first to receive UL Certification to ASTM E3037. To find additional manufacturers that are certificated to ASTM E3037, visit UL's [Product iQ™](#), our online certification database that provides detailed product certification information.

For additional information on firestop movement, watch our [webinar](#).

Learn more at [UL.com](#).



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