

# Aquatherm Technical Bulletin

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## Aquatherm and Fire Stopping

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Firestops and smoke seals are fire protection devices that help maintain the integrity of fire rated partitions by sealing cracks and holes created by penetrations (such as a pipe) of the rated partition with fireproof materials to prevent fire and smoke from penetrating the rated partition. Thus, the rated partition is maintained which keeps the fire from spreading and allows occupants to escape.

Firestop materials for plastic pipe contain materials that intumesce, or expand, when heated. This expansion of the firestop material fills the hole of the pipe penetration if the pipe softens and/or collapses due to the heat of the fire.

Plastic pipe firestops are tested to verify their performance. The testing is done by building a section of wall or floor or a floor/wall ceiling assembly and installing a section of the plastic pipe to be tested through the assembly to mimic, as much as possible, actual building conditions. The complete assembly is subjected to a fire in compliance with ASTM E814 or UL 1479. For the firestop to qualify as a “listed” or “classified” firestop, it must resist the passage of flame, smoke and temperature for the prescribed time period that equals the assembly barrier rating in hours.

Each type and size of plastic pipe must be subjected to the testing to ensure that the pipe and firestop combinations will be adequate to maintain the integrity of the rated floor, wall or ceiling assembly.

Firestop systems tested to ASTM E814 (UL1479) have two ratings: a “F” rating and a “T” rating. The “F” Rating defines the amount of time in hours before flame penetrates through openings from the fire side of a rated partition to the non-fire side of a rated partition. An F-rated opening shall also withstand a hose stream test.

The “T” Rating defines the amount of time in hours for the surface of the penetrating item on the non-fire side of the test assembly to rise 325 deg. F above ambient temperature. The purpose of the “T” rating is to prevent fire spread from the fire side of a rated partition to the non-fire side of the partition when no breach in the fire partition exists.

In 2000 the International Building Code required that the “F” and “T” ratings be equal for items penetrating through rated floor assemblies. See 2018 IBC 714.5.1.2.

The following manufacturers have products that have been listed or evaluated for use in firestopping Aquatherm piping systems. Please contact the individual manufacturer with any questions concerning proper use of their specific product.

<p><b>3m Building and Commercial Services Division</b>          3M Center, Building 223-2N-20          St. Paul, MN 55144-1000          (800)328-1687 (George Yoshida)  <a href="http://www.3m.com/firestop">http://www.3m.com/firestop</a></p>	<p><b>Hilti</b>          5400 South 122nd East Avenue          Tulsa, OK 74146          (800)879-8000 (Firestop Engineering Group)  <a href="http://www.us.hilti.com">www.us.hilti.com</a></p>
<p><b>Nuco</b>          150 Curtis Drive          Guelph, ON Canada N1K 1N5          (800) 853-3984 (Simon Leclerc)  <a href="http://www.nucoinc.com/">http://www.nucoinc.com/</a></p>	<p><b>Passive Fire Protection Products (PFPP)</b>          1412 Derwent Way          Delta BC, Canada V3M-6H9          (800)810-1788 (Norm Johnston)  <a href="http://www.firestop.com">www.firestop.com</a></p>
<p><b>RectorSeal</b>          2601 Spenwick Drive          Houston, TX 77055          (800)231-3345 ext. 3282 (Riley Archer)  <a href="http://www.rectorseal.com">http://www.rectorseal.com</a></p>	<p><b>Specified Technologies, Inc.</b>          210 Evans Way          Somerville, NJ 08876          (800)992-1180 (Bernadette Bautista (West Coast), George Gornick (East Coast))  <a href="http://www.stifirestop.com/">http://www.stifirestop.com/</a></p>

1. Revised 21 June 2017
2. Revised 28 December. 2021