Single Penetrations
Vertical (wall) Assembly

Test Standards: ASTM E-814, UL 1479: Non-metallic Open and Closed System
CAN/ULC S115-M11: Non-metallic Open and Closed System
Positive Pressure Differential – 50 Pa (0.2 in. of water) Minimum
CSI Code: 07 84 13 Penetration Firestopping

Penetration Material & Size

<table>
<thead>
<tr>
<th>Max Space</th>
<th>ASTM E-814</th>
<th>ULC S115</th>
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</thead>
<tbody>
<tr>
<td>Hole Size</td>
<td>&quot;F&quot;&quot;</td>
<td>&quot;F&quot;&quot;</td>
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<tr>
<td>&quot;T&quot;&quot;</td>
<td>&quot;FT&quot;&quot;</td>
<td>&quot;FTH&quot;</td>
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Material & Size

- Polypropylene SDR 7.4 to SDR 11
- 90 mm OD (3" ID) or smaller
- Aquatherm Fusiolen Polypropylene Pipes

Penetration Max Annular ASTM E-814 ULC S115

<table>
<thead>
<tr>
<th>Hole Size</th>
<th>Space</th>
<th>&quot;F&quot;&quot;</th>
<th>&quot;T&quot;&quot;</th>
<th>&quot;F&quot;&quot;</th>
<th>&quot;FT&quot;</th>
<th>&quot;FTH&quot;</th>
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</thead>
<tbody>
<tr>
<td>(3-5/8&quot;)</td>
<td>(3/5&quot;)</td>
<td>N/A</td>
<td>45 min</td>
<td>1 hour</td>
<td>0 hour</td>
<td>45 min</td>
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System Design Instructions

1. Penetrating Item: Centered in hole, see table above. Single penetrations only, maximum hole size not to exceed table above.
2. Wall Assembly: 1 hour ASTM E-119 or CAN/ULC S101 metal or wood framed fire rated gypsum wall board (GWB) wall assembly.
3. Firestop System; Component 1: Gypsum Batch – Two piece of min 16 mm (5/8 in.) thick Type ‘X’ gypsum board. Patch to be min 254 by 254 mm (10 by 10 in.). Each half shall be tightly butted and secured to gypsum board with a min of four nom 4.8 mm (3/16 in.) (or larger) diam steel toggle bolts with 25 mm (1 in.) diam steel washers, located in each corner of the patch. Max diam of opening is 30 mm (1.1 in.) larger than outside diam of penetrant.
4. Firestop System; Component 2: PFP Partners – Wrap Strip WS1* Nom 3mm (1/8 in.) thick intumescent material supplied in 51 mm (2 in.) wide strips. Min five continuous layers of wrap strip to be wrapped around the circumference of the penetrant. Wrap strips are individually wrapped around penetrant with ends butted and held in place with aluminum foil tape. Butted ends of successive layers may be staggered or aligned. Layers of wrap strips to be slid along the through penetration into patch and gypsum board such that the outer edges of the wrap strips extend approximately 13 mm (1/2 in.) beyond the surface of the patch.
5. Firestop System, Component 3: PFP Partners – Firestop 3600EX*, 4100NS* or 4800DW* min 16mm (5/8 in.) diam bead of sealant shall be applied over the butted seam of the gypsum board patch and around the entire perimeter of patch at the gypsum board/gypsum board patch interface. A min 6 mm (1/4 in.) diam bead of sealant shall be applied at the wrap strip / drywall interface, bead applied prior to the installation of the aluminum foil in Item 4.

*WH Labeled Component