
PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. **Cast-in-place watertight firestop devices.**

1.2 PERFORMANCE REQUIREMENTS

A. **Rated Systems: Provide through-penetration firestop systems with the following ratings per ASTM E 814 or UL 1479.**

1. **F-Rated Systems: Provide through-penetration firestop systems with F-ratings not less than that of fire-resistance rating of penetrated assemblies.**
2. **T-Rated Systems: Provide through-penetration firestop systems with T-ratings, as well as F-ratings, where systems protect penetrating items located outside wall cavities or fire-resistance-rated shaft enclosures.**
3. **L-Rated Systems: Provide through-penetration firestop systems with L-ratings of not more than 1.0 cfm/sq. ft (0.044 cu. m/s x sq. m) at both ambient temperatures and 400 deg F (204 deg C), per UL 1479.**
4. **W-Rated Systems: Provide through-penetration firestop systems with W-ratings indicating resistance to passage of water, per UL 1479.**

1.3 QUALITY ASSURANCE

A. **Fire-Resistance Ratings: Where indicated, provide penetration firestopping devices tested for fire resistance per ASTM E 814 by a testing agency acceptable to authorities having jurisdiction.**

1. **Indicate design designations from UL's "Fire Resistance Directory."**

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. **Manufacturers/Products: Subject to compliance with requirements, provide products by one of the following manufacturers comparable to the Basis of Design product specified:**

1. Hubbard Enterprises, Vista, CA, (800) 321-0316, www.holdrite.com, sales@holdrite.com.
2. Substitutions: [In accordance with Instructions to Bidders and Division 01 General Requirements] [None allowed].

2.2 CAST-IN-PLACE WATERTIGHT FIRESTOP DEVICES

- A. **Cast-in-Place Watertight Firestop Devices:** Factory-assembled devices for use in cast-in-place concrete floors and consisting of an outer sleeve lined with an intumescent strip, a radial extended flange attached to one end of the sleeve for fastening to concrete formwork, and a waterstop gasket/mid-body seal for embedment and sealing to concrete slab, protecting devices from contraction and expansion of concrete while maintaining continuous diaphragm designed to prevent passage of water.
1. **Basis of Design Product:** Presealed Systems, HydroFlame.
 2. **Color:** Gray/Black.
 3. **Heat Expansion, Intumescence:**
 - a. Expansion begins **410 deg. F (210 deg. C)**.
 - b. Significant expansion **555 deg. F (290 deg. C)**.
 - c. Free expansion 25 times: 5 minutes at **662 deg. F (350 deg. C)**.
 4. **Weatherability per ASTM G23 and ASTM G53:**
 - a. Test condition time after exposure: temperature **90 deg. F (32 deg. C)** at 90 percent humidity, 120 days: No change in expansion.
 5. **Surface Burning Characteristics per ASTM E 84 and UL 723:**
 - a. Flame spread index: **0**.
 - b. Smoke development index: **5**.
 6. **Nonmetallic Through-Penetrants:**
 - a. Pipe diameters: **NPS 1/2 to NPS 4, NPS 6 (DN 15 to DN 100, DN 150)**.
 - b. Pipe materials: PVC, ccPVC, CPVC, RNC, ABS, ccABS.
 - c. **Basis of Design UL System: No. F-A-2176**
 - 1) F Rating: 3 hour.
 - 2) T Ratings: 3 hour, except ABS pipe and ccABS pipe: 0 hour.
 - 3) L Rating at Ambient: Less than **1 cfm/sq. ft. (0.044 L/s/sq. m)**.
 - 4) L Rating at **400 deg. F (204 deg. C): 1 cfm/sq. ft. (0.044 L/s/sq. m)**.
 - 5) W Rating: Watertight, Class 1, when tested with minimum **3.0 feet (9.0 kPa)** head pressure for 72 hours following 28-day concrete slab cure.
 7. **Metallic Through-Penetrants:**
 - a. Pipe diameters: **NPS 1/2 to NPS 4, NPS 6 (DN 15 to DN 100, DN 150)**.
 - b. Pipe materials: steel pipe, iron pipe, steel conduit, electrometallic tubing, copper tubing, copper pipe.
 - c. **Basis of Design UL System: No. F-A-1097**
 - 1) F Rating: 3 hour.
 - 2) T Ratings: 0 hour.
 - 3) L Rating at Ambient: Less than **1 cfm/sq. ft. (0.044 L/s/sq. m)**.
 - 4) L Rating at **400 deg. F (204 deg. C): 1 cfm/sq. ft. (0.044 L/s/sq. m)**.
 - 5) W Rating: Watertight, Class 1, when tested with minimum **3.0 feet (9.0 kPa)** head pressure for 72 hours following 28-day concrete slab cure.

PART 3 - EXECUTION

3.1 INSTALLATION OF CAST-IN-PLACE WATERTIGHT FIRESTOP DEVICES

- A. Install cast-in-place watertight firestop devices for pipes passing through concrete and masonry walls and concrete floor and roof slabs in accordance with referenced test requirements and manufacturer's recommendations.**
 - 1. Verify device selection based upon pipe type, size, and concrete thickness.**
 - 2. Align device base hatch marks with penetration layout lines on form deck.**
 - 3. Attach device to form deck, nailing device through holes in lower base.**
 - 4. Secure protective cap to device top prior to pouring concrete.**

- B. Installation of Pipe: Avoid damaging the mid-body seal membrane. Deburr and clean debris from pipe prior to insertion in device. Coat pipe end with a compatible lubricant as necessary prior to inserting from bottom up.**

PART 1 - GENERAL (Not Used)

PART 2 - PRODUCTS

2.1 CAST-IN-PLACE WATERTIGHT FLOOR SLEEVES

- A. Cast-in-Place Watertight Floor Sleeves with Integral Firestopping:** Factory-assembled devices for use in cast-in-place concrete floors and consisting of an outer sleeve lined with an intumescent strip, a radial extended flange attached to one end of the sleeve for fastening to concrete formwork, and a neoprene gasket for embedment and sealing to concrete slab.
 - 1. Manufacturers/Products:** Subject to compliance with requirements, provide the following product:
 - a. Hubbard Enterprises, Vista, CA, (800) 321-0316, www.holdrite.com, sales@holdrite.com, HydroFlame. Substitutions: [In accordance with Instructions to Bidders and Division 01 General Requirements] [None allowed].**
 - b. Rated Firestop Systems: Per ASTM E 814 or UL 1479:**
 - 1) Nonmetallic Through-Penetrants: UL System: No. F-A-2176.**
 - 2) Metallic Through-Penetrants: UL System: No. F-A-1097.**
 - c. Watertight: 3.0 feet (9.0 kPa) head pressure, minimum, per UL 1479.**

PART 3 - EXECUTION (Not Used)