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|  | Title: YALE OFFICE OF FACILITIES PROCEDURE MANUAL<br>Chapter: 01 - Yale Design Standard<br>Division: 07 00 00 Thermal and Moisture Protection | Section: <b>07 84 00</b> Requirements for Firestopping |
|  |   | Date: December 2023                                    |
|  |   | Author: Office of Facilities                           |

## **PART 1 - INTRODUCTION**

### 1.1 PURPOSE

This section contains general design criteria for firestopping.

## **PART 2 - GENERAL DESIGN REQUIREMENTS**

### 2.1 SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

- A. Firestopping must be specified and detailed as required by building codes. Firestopping must consist of furnishing and installing a material or a combination of materials to form an effective barrier against the spread of flame, smoke, and gases, and to maintain the integrity of fire resistance rated walls, partitions, floors, and ceiling assemblies, including through-penetrations and construction joints. Through-penetrations include the annular spaces around pipes, tubes, conduit, wires, cables, and vents. Construction joints include those used to accommodate expansion, contraction, wind, or seismic movement. Firestopping material must not interfere with the required movement of the joint.
- B. A single manufacturer must supply all firestopping materials, which must be compatible with adjacent building components.
- C. The building code official may review and approve all firestopping and smokestopping measures.

### 2.2 SUBMITTALS


Submit the following design and construction documents to Yale University.

#### A. Design Documents

Provide details of all firestopping and smokestopping conditions as part of the construction documents.

#### B. Construction Documents

1. Submit detail drawings including manufacturer's data, typical details, installation instructions, and fire test data and/or a report.
2. Submit certificates attesting that firestopping material complies with the project specifications. For example, an Underwriters Laboratory label or listing, or a written certificate from a nationally-recognized testing agency stating that the items have been tested and conform to specified requirements.

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## 2.3 PRODUCT STANDARDS

- A. ASTM E 84 – Surface Burning Characteristics of Building Materials
- B. ASTM E 119 – Method for Fire Tests of Building Construction and Materials
- C. ASTM E 814 – Fire Tests of Through-Penetration Fire Stops
- D. NFPA 101 – Life Safety Code
- E. UL 05 – Fire Resistance Directory
- F. UL 263 – Fire Tests of Building Construction and Materials
- G. UL 723 – Test for Surface Burning Characteristics of Building Materials
- H. US 1479 – Fire Tests of Through-Penetration Firestops

## 2.4 MATERIALS

Firestopping materials must conform to the following standards.

### A. Fire Stop and Joint Sealant Systems

Use a single-component silicone sealant by Dow Corning, Bio Fire shield, Inc., or approved equivalent material.

### B. Intumescent Materials


Use materials capable of expanding up to 10 times when exposed to temperatures over 250°F. Use a non-corrosive material by 3M, Bio Fire shield, Flame Stop, or approved equivalent that is compatible with synthetic cable jackets.

### C. Silicone Foam Sealant

Use a two-component foam silicone sealant by Dow Corning, or an approved equivalent material.

### D. Firestopping Pillows

Use Spec Seal SSB pillows by Specified Technologies, Inc., Meta caulk firestop Pillows by Rector Seal Corporation, or approved equivalent material.

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E. Devices

Use UL-tested/listed devices recommended by the manufacturer for the intended use.

F. Mortar Use: UL-tested/listed mortar mix.

G. Packing

Use loose fill, blanket or board forms alumina-silica or ceramic fiber packing, which is rated to a minimum of 2000°F.

H. Fire-Safing Insulation

Use fire-safing insulation of a minimum 4 lb/ft<sup>3</sup> density and a minimum 2000°F melt point.

2.5 PREPARATION

Clean substrate of dirt, dust, grease, oil, mill scale, or other material that may affect the firestopping bond. Starting installation of the firestopping constitutes acceptance of the surface compatibility and the condition of the substrate.

2.6 INSTALLTION GUIDELINES

A. Install firestopping materials strictly in accordance with the material manufacturer’s instructions and the rated design.

B. Firestopping areas must not be covered or enclosed until inspection is complete and approved. A manufacturer’s representative must perform initial and periodic inspections of firestopping applications during the work to ensure adherence to the manufacturer’s instructions and specified requirements.

| Date    | Description of Change | Pages / Sections Modified | ID                   |
|---------|-----------------------|---------------------------|----------------------|
| 12/1/23 | Template update       | -                         | Office of Facilities |
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