~~~~~ ***PROJECT NOTE*** ~~~~~~

AOR/EOR IS RESPONSIBLE FOR REVIEWING THIS SPECIFICATION SECTION IN DETAIL FOR COORDINATION WITH THE PROJECT SCOPE OF WORK.

ALL "PROJECT NOTE" TEXT IS TO BE REMOVED FOLLOWING REVIEW OF THE CONTENT OF EACH NOTE BY THE AOR/EOR.

EDIT THE DOCUMENT FOOTER TO INCLUDE THE PROJECT NAME AND NUMBER.

EDIT THE DOCUMENT HEADER TO INDICATE THE "AOR PROJECT ISSUE" DATE. THE "CPS CONTROL" DATE SHOULD NOT BE EDITED.

ANY MODIFICATIONS TO THE TECHNICAL STANDARDS IN THIS SECTION - INCLUDING THE REMOVAL OR ADDITION OF MANUFACTURERS - MUST BE APPROVED BY CPS. REQUESTS FOR MODIFICATION ARE TO BE SUBMITTED TO THE DESIGN MANAGER DURING THE DESIGN PHASE FOR REVIEW AND APPROVAL.

~~~ ***END OF PROJECT NOTE*** ~~~~

# SECTION 07 84 00
# FIRESTOPPING

## PART 1 GENERAL

1.01 SECTION INCLUDES

A. Firestopping systems.
B. Firestopping of joints and penetrations in fire-resistance-rated and smoke-resistant assemblies, whether indicated on drawings or not, and other openings indicated.
C. Fire-resistive joint systems.

1.02 REFERENCE STANDARDS

A. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials; 2022.
B. ASTM E814 - Standard Test Method for Fire Tests of Penetration Firestop Systems; 2024.
C. ASTM E1966 - Standard Test Method for Fire-Resistive Joint Systems; 2024.
D. ASTM E2174 - Standard Practice for On-Site Inspection of Installed Firestop Systems; 2024.
E. ASTM E2393 - Standard Practice for On-Site Inspection of Installed Fire Resistive Joint Systems and Perimeter Fire Barriers; 2024.
F. ASTM E2307 - Standard Test Method for Determining Fire Resistance of Perimeter Fire Barriers Using Intermediate-Scale, Multi-Story Test Apparatus; 2025.
G. ASTM E2837 - Standard Test Method for Determining the Fire Resistance of Continuity Head-of-Wall Joint Systems Installed between Rated Wall Assemblies and Nonrated Horizontal Assemblies; 2023a, with Editorial Revision (2024).
H. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi; 2015, with Editorial Revision (2021).
I. ITS (DIR) - Directory of Listed Products; Current Edition.
J. FM 4991 - Approval Standard of Firestop Contractors; 2013.
K. FM (AG) - FM Approval Guide; Current Edition.
L. SCAQMD 1168 - Adhesive and Sealant Applications; 1989, with Amendment (2022).
M. UL 1479 - Standard for Fire Tests of Penetration Firestops; Current Edition, Including All Revisions.

N. UL 2079 - Standard for Tests for Fire Resistance of Building Joint Systems; Current Edition, Including All Revisions.
O. UL (DIR) - Online Certifications Directory; Current Edition.
P. UL (FRD) - Fire Resistance Directory; Current Edition.

1.03 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
B. Schedule of Firestopping: List each type of penetration, fire rating of the penetrated assembly, and firestopping test or design number.
C. Product Data: Provide data on product characteristics, performance ratings, and limitations.
D. Sustainable Design Submittal: Submit VOC content documentation for nonpreformed materials.
E. Installer's qualification statement.

1.04 QUALITY ASSURANCE

A. Fire Testing: Provide firestopping assemblies of designs that provide the scheduled fire ratings when tested in accordance with methods indicated.
    1. Listing in UL (FRD), FM (AG), or ITS (DIR) will be considered as constituting an acceptable test report.
    2. Submission of actual test reports is required for assemblies for which none of the above substantiation exists.
B. Installer Qualifications: Company specializing in performing the work of this section and:
    1. Approved by Factory Mutual Research Corporation under FM 4991, or meeting any two of the following requirements:
    2. Verification of minimum three years documented experience installing work of this type.
    3. Verification of at least five satisfactorily completed projects of comparable size and type.
    4. Licensed by local authorities having jurisdiction (AHJ).

1.05 MOCK-UPS

A. Install one firestopping assembly representative of each fire rating design required on project.
    1. Where one design may be used for different penetrating items or in different wall constructions, install one assembly for each different combination.
    2. Where firestopping is intended to fill a linear opening, install at least 1 linear foot of firestopping.
B. If accepted, mock-up will represent minimum standard for this work.
C. If accepted, mock-up may remain as part of this work. Remove and replace mock-ups not accepted.

1.06 FIELD CONDITIONS

A. Comply with firestopping manufacturer's recommendations for temperature and conditions during and after installation; maintain minimum temperature before, during, and for three days after installation of materials.
B. Provide ventilation in areas where solvent-cured materials are being installed.

**PART 2 PRODUCTS**

2.01 MANUFACTURERS

A. Firestopping Manufacturers:
    1. 3M Fire Protection Products: www.3m.com/firestop
    2. A/D Fire Protection Systems Inc: www.adfire.com
    3. DAP Inc: www.dap.com
    4. Firestop Systems Inc.: www.firestopstystemsinc.com
    5. International Protective Coatings Corp.: www.international-pc.com
    6. Isolatek International: www.isolatek.com
    7. NUCO Industries: www.nucoind.com

8. RectorSeal, a CSW Industrials Company: www.rectorseal.com/firestop-solutions
9. Specified Technologies Inc: www.stifirestop.com
10. Tremco Commercial Sealants & Waterproofing: www.tremcosealants.com

2.02 MATERIALS

A. Firestopping Materials: Any materials meeting requirements.
B. Volatile Organic Compound (VOC) Content: Provide products having VOC content lower than that required by SCAQMD 1168.
C. Mold and Mildew Resistance: Provide firestopping materials with mold and mildew resistance rating of zero(0) in accordance with ASTM G21.
D. Primers, Sleeves, Forms, Insulation, Packing, Stuffing, and Accessories: Provide type of materials as required for tested firestopping assembly.
E. Putty Pads: Putty pads for back of wall side of outlets in walls (rated and non-rated). Wrap back and sides of electrical or communications back-boxes with intumescent fire-rated moldable putty pads.
   1. 3M: Fire Barrier Moldable Putty Pads MPP+.
   2. Metacaulk: Fire-rated putty pads.
   3. Tremco: Tremstop MP.
   4. Hilti: CP 617 Firestop Putty Pads.
   5. GCP Applied Technologies: Flamesafe FSP 1077 putty pads.
F. Fire Ratings: Refer to drawings for required systems and ratings.

2.03 FIRESTOPPING ASSEMBLY REQUIREMENTS

A. Perimeter Fire Containment Firestopping: Use system that has been tested according to ASTM E2307 to have fire resistance F Rating equal to required fire rating of floor assembly.
   1. Temperature Rise: Provide systems that have been tested to show T Rating as indicated.
B. Head-of-Wall (HW) Joint System Firestopping at Joints Between Fire-Rated Wall Assemblies and Non-Rated Horizontal Assemblies: Use system that has been tested according to ASTM E2837 to have fire resistance F Rating equal to required fire rating of wall assembly.
C. Floor-to-Floor (FF), Floor-to-Wall (FW), Head-of-Wall (HW), and Wall-to-Wall (WW) Joints, Except Perimeter, Where Both Are Fire-Rated: Use system that has been tested according to ASTM E1966 or UL 2079 to have fire resistance F Rating equal to required fire rating of the assembly in which the joint occurs.
   1. Listing by FM (AG), ITS (DIR), UL (DIR), or UL (FRD) in their certification directories will be considered evidence of successful testing.
D. Through Penetration Firestopping: Use system that has been tested according to ASTM E814 to have fire resistance F Rating equal to required fire rating of penetrated assembly.
   1. Listing by FM (AG), ITS (DIR), UL (DIR), or UL (FRD) in their certification directories will be considered evidence of successful testing.

2.04 FIRESTOPPING SYSTEMS

A. Firestopping: Any material meeting requirements.
   1. Fire Ratings: Use system that is listed by FM (AG), ITS (DIR), or UL (FRD) and tested in accordance with ASTM E814, ASTM E119, or UL 1479 with F Rating equal to fire rating of penetrated assembly and minimum T Rating Equal to F Rating and in compliance with other specified requirements.

2.05 FIRE-RESISTIVE JOINT SYSTEM SCHEDULE

A. Where UL-classified systems are indicated, they refer to system numbers in UL (FRD) under product Category XHBN for Joint Systems and product Category XHDG for Perimeter Fire Containment Systems.
B. Floor-to-Floor, Fire-Resistive Joint Systems:
   1. UL-Classified Systems: FF-D- 0000-2999.

2. Assembly Rating: As indicated.
3. Nominal Joint Width: As indicated.
4. Movement Capabilities: Class II and Class III - percent compression or extension.

C. Wall-to-Wall, Fire-Resistive Joint Systems:
1. UL-Classified Systems: WW-D- 0000-1999.
2. Assembly Rating: As indicated.
3. Nominal Joint Width: As indicated.
4. Movement Capabilities: Class II and Class III.

D. Head-of-Wall, Fire-Resistive Joint Systems:
1. UL-Classified Systems: HW-D- 0000-0999.
2. Assembly Rating: As indicated.
3. Nominal Joint Width: As indicated.
4. Movement Capabilities: Class II and Class III.

E. Bottom-of-Wall, Fire-Resistive Joint Systems:
1. UL-Classified Systems: BW- S- 1000-1999.
2. Assembly Rating: 1 hour and 2 hours.
3. Nominal Joint Width: As indicated.

F. Perimeter Fire-Resistive Joint Systems:
1. UL-Classified Perimeter Fire-Containment Systems: CW- S- 1000-1999.
2. Integrity Rating: 2 hours.
3. Insulation Rating: 1 hour.
4. Linear Opening Width: 2-1/2 inches, maximum.

## PART 3 EXECUTION

3.01 EXAMINATION

A. Verify openings are ready to receive the work of this section.

3.02 PREPARATION

A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other materials that could adversely affect bond of firestopping material.
B. Remove incompatible materials that could adversely affect bond.
C. Install damming materials to arrest liquid material leakage.

3.03 INSTALLATION

A. Install materials in manner described in fire test report and in accordance with manufacturer's instructions, completely closing openings.
B. Do not cover installed firestopping until inspected by authorities having jurisdiction.
C. Install labeling required by code.

3.04 FIELD QUALITY CONTROL

A. Independent Testing Agency: Inspection agency employed and paid by Board, will examine penetration firestopping in accordance with ASTM E2174 and ASTM E2393.
B. Repair or replace penetration firestopping and joints at locations where inspection results indicate firestopping or joints do not meet specified requirements.

3.05 CLEANING

A. Clean adjacent surfaces of firestopping materials.

3.06 PROTECTION

A. Protect adjacent surfaces from damage by material installation.
B. Protect and maintain conditions during and after installation to ensure through-penetration firestop systems are without damage or deterioration at time of Preliminary Acceptance.

| FIRESTOPPING SYSTEMS WORKSHEET |
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PROJECT:_____ *ATTACH CUT FROM UL BOOK IDENTIFYING
INSTALLER:_____ MATERIAL TO BE PROVIDED.

| PENETRATING ELEMENT | CONST. OF ASSEMBLY PENETRATED | PIPE INSULATON? | ASSEMBLY SLEEVED? | HOUR RATING | UL SYSTEM * |
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END OF SECTION