

## DIVISION 10 - SPECIALTIES

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CHALKBOARDS AND TACKBOARDS**

General

The minimum vertical writing surface per room shall be not less than 32 s.f.. 64 s.f. is the standard for classroom spaces. All vertical writing surfaces shall have a continuous tray at the base for chalk, markers and erasers. They shall also have a top 1" cork strip.

One set of markers shall be included with every 8' of marker board. One eraser- and four map clips shall be included with every 8' of marker board.

10110

**Chalkboards**

Chalkboards are not to be specified unless there is a specific need and approved by the NAU Project Manager.

10115

**Markerboards**

Dry markerboards shall be:

Porcelain boards, a face sheet of 24 gauge enameling grade steel, with a three coat porcealinize process, a writing coat greater or equal to 0.0025".

The core material shall be Cortron ½" -thick industrial grade particle board complying with ANSI A208.1, Grade 1-M-1.

Backing sheet shall be 0.015" aluminum. Laminating adhesive shall consist of moisture resistant thermoplastic adhesive.

Color of finished face shall be white, non-glare matte type finish.

Fabricated frames and trim shall be clear anodized aluminum, not less than 0.062" or as specified by the user group. Marker trays shall be aluminum, solid extrusion with a ribbed section, with smoothly curved ends.

Fixed-height whiteboards should be mounted with the bottom edge at 36" AFF.

Specify a fifteen-year replacement warranty for marker boards. Warranty shall protect against; deterioration of original writing and erasing qualities, becoming slick or shiny, crazing, cracking or flaking. Permanent ink shall be able to be removed.

For any other writing surface type, for example glass boards, submittals are to be provided for review and approval by the NAU Project Manager. White board paint is not acceptable.

10120

**Tackboards**

Cork tackboards shall have a single layer, 1/4" thick, seamless, compressed fine grain natural cork sheet, sanded for a natural finish, complying with MS MIL-C-15116, Type II. Fabric covered tackboards are acceptable.

10130

**Operable Board Units**

Operable Board Units shall comply with section 10115, Markerboards.

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10150	<b>COMPARTMENTS AND CUBICLES</b>  For information on copy rooms and custodial closets refer to Division 13.
10160	Toilet Compartments: A minimum of one 5'X6' toilet compartment shall be incorporated into each toilet room in order to meet ADA requirements. Metal Compartments: <ul style="list-style-type: none"><li>• Ceiling-hung (University preference for ease of cleaning)</li><li>• Floor-supported</li><li>• Metal partitions shall not be painted metal</li></ul>
10165	Plastic Laminate Toilet Compartments <ul style="list-style-type: none"><li>• Ceiling-hung (University preference for ease of cleaning)</li><li>• Floor-supported</li><li>• A random pattern is preferred to solid colors (to extend time when discoloration from repetitive cleaning becomes obvious). Sample patterns might be:<ul style="list-style-type: none"><li>• Wilson Art: Agean 1762-60, or Storm Nebula 4634-60 or</li><li>• Pionite: Suede Rose Chromatix AR221-S</li></ul></li></ul>
10260	<b>WALL AND CORNER GUARDS</b> Preferred style is Mercer #691 3/16" x 2.5" x 2.5" x 54" or equivalent approved by the NAU Project Manager.
10300 10305	<b>FIREPLACES AND STOVES</b> Prefabricated Fireplaces Any time fireplaces are specified, the building's existing mechanical system's air balance status shall be verified and written definition of design impacts shall be included in the specifications.
10350	<b>FLAGPOLES</b>  Inclusion of Flagpoles and their location for a project must be approved by NAU Office of the President.
10352	Ground Set Flagpoles
10400	<b>IDENTIFYING DEVICES</b>
10420	Plaques Two comparative sources for metal building plaques are: Metal Decor Tel.- 1-800-637-8591 (Referred by University Development) PMA Aero Etch Tel. 1-602-863-0133 (Referred by University Development)  The standard size for plaques varies. The lettering Style shall be either Times Roman Bold, ( <b>Times Roman Bold</b> )), or Palentino Bold, ( <b>Palentino Bold</b> ) Display: Letters should be upper and lower case. Text should be bordered with a border proportionate to the size of the plaque i.e. 1/4" for an 8" x 10" plaque, 1/2" for an 18" x 24" plaque. Letters and border should be raised and polished, background should be brown pebbled.  Proofs: The President's Management Team approval of proofs/rubbings for plaques is required

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	prior to final casting or etching.
	Material: Exterior plaques - Bronze is preferred, brass is acceptable. Interior plaques - Bronze, brass or aluminum is acceptable.
	Fastening: Concealed threaded studs on back of plaque. Setting should be in grout or epoxy.
10430	Exterior Signs All exterior signs shall conform to the specifications of the Northern Arizona Signage Policy. Ask Owner for current design standards and requirements.
10440	Interior Signs All interior signs shall conform to the current specifications of the Northern Arizona Signage Policy. Ask Owner for current design standards and requirements.
<b>10500</b>	<b>LOCKERS</b>
10505	Metal Lockers
<b>10520</b> 10522	<b>FIRE PROTECTION SPECIALTIES</b> Fire Extinguishers, Cabinets and Accessories  Cabinets shall be specified as the recessed type and ADA approved. Non-locking type.  All extinguisher installations must include approved listed mounting hardware.  All building areas are classified according to the type of hazards that exist. Corresponding extinguishing units shall be specified according to NFPA 10.
<b>10523</b>	<b>FIRESTOPPING</b>  <b>PART 1 – GENERAL</b>  <b>RELATED DOCUMENTS</b>  A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification Section, apply to work specified in this section.  <b>DEFINITIONS</b>  A. Firestopping: Material or combination of materials used to retain integrity of fire-rated construction by maintaining an effective barrier against the spread of flame, smoke, and hot gases through penetrations in, or construction joints between, fire rated wall and floor assemblies.  <b>GENERAL DESCRIPTION OF THE WORK OF THIS SECTION</b>  Only tested firestop systems shall be used in specific locations as follows:

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A.	Penetrations for the passage of duct, cable, cable tray, conduit, piping, electrical busways and raceways through fire-rated vertical barriers (walls and partitions), horizontal barriers (floor/ceiling assemblies), and vertical service shaft walls and partitions.
B.	Safing slot gaps between edge of floor slabs and curtain walls.
C.	Openings between structurally separate sections of wall or floors.
D.	Gaps between the top of walls and ceilings or roof assemblies.
E.	Expansion joints in walls and floors.
F.	Openings and penetrations in fire-rated partitions or walls containing fire doors
G.	Openings around structural members which penetrate floors or walls.

### RELATED WORK OF OTHER SECTIONS

- A. Coordinate work of this section with work of other sections as required to properly execute the work and as necessary to maintain satisfactory progress of the work of other sections, including:
1. Cast-In-Place Concrete
  2. Joint Sealers
  3. Masonry Work
  4. Lath and Plaster
  5. Gypsum Drywall Systems
  6. Sound, Vibration and Seismic Control
  7. Fire Suppression and Supervisory Systems
  8. Basic Mechanical Materials and Methods
  9. Mechanical Insulation
  10. Fire Protection
  11. Plumbing
  12. Basic Electrical Materials and Methods

### THROUGH-PENETRATION UL CLASSIFICATION SYSTEM

#### Fire Stopping Systems UL Classification System

Construction Type of System - Penetrated Construction Identification

1. No Penetrating Items: F, W, C A, B, J, K, L 0001-0999
2. Metallic Pipes, Conduit or Tubing: F, W, C A, B, J, K, L 1001-1999
3. Nonmetallic Pipe, Conduit or Tubing: F, W, C A, B, J, K, L 2001-2999
4. Electric Cables: F, W, C A, B, J, K, L 3001-3999
5. Cable, Trays with Electric Cables: F, W, C A, B, J, K, L 4001-4999
6. Insulated Pipes: F, W, C A, B, J, K, L 5001-5999
7. Electrical Bussduct Penetrations: F, W, C A, B, J, K, L 6001-6999
8. Mechanical Ductwork Penetrations: F, W, C A, B, J, K, L 7001-7999

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9. Multiple Penetrations through Common Openings: F, W, C A, B, J, K, L 8000-8999  
**Construction Penetration**

F - Floor penetration  
W - Wall penetration  
C - Either floor or wall penetration

**Type of Construction**

A – Concrete floors equal to or less than 5-inches thick  
B – Concrete floors greater than 5-inches thick  
J – Concrete or masonry walls equal to or less than 8-inches thick  
K – Concrete or masonry walls greater than 8-inches thick  
L – Framed walls

### JOINT UL CLASSIFICATION SYSTEM

**Fire-Resistant Joint Systems UL Classification System**

Joint  
System  
Movement  
Capability Joint Width  
1. Floor-to-Floor FF D 0000-0999  
2. Wall-to-Wall WW D 0000-0999  
3. Floor-to-Wall: FW D 0000-0999  
4. Head of Wall: HW D 0000-0999

**Movement Capability**

D=Dynamic Has movement capability  
S=Static which does not require movement capability

**Joint Width**

0000-0999 Less than or equal to 2”  
1000-1999 Greater than 2” Less than or equal to 6”  
2000-2999 Greater than 6” Less than or equal to 12”

### QUALITY ASSURANCE

- A. Fire-Test-Response Characteristics: Provide through-penetration fire stop systems and fire- resistive joint systems that comply with specified requirements of tested systems.
- B. Fire stop System installation must meet requirements of ASTM E 814, UL 1479 or UL 2079 tested assemblies that provide a fire rating equal to that of construction being penetrated.
- C. Proposed fire stop materials and methods shall conform to applicable governing codes having local jurisdiction.
- D. Fire stop Systems do not reestablish the structural integrity of load bearing

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	partitions/assemblies, or support live loads and traffic. Installer shall consult the structural engineer prior to penetrating any load bearing assembly.
E.	For those firestop applications that exist for which no qualified tested system is available through a manufacturer, an engineering judgment derived from similar qualified tested system designs or other tests will be submitted to local authorities having jurisdiction for their review and approval prior to installation. Engineering judgment documents must follow requirements set forth by the International Firestop Council. <ol style="list-style-type: none"><li>1. Contractors will be responsible to check with STI and or Hilti to verify that either manufacturer does not have a tested assembly for a given application prior to submission of any Engineering Judgment.</li></ol>

### SUBMITTALS

- A. Submit Product Data: Manufacturer's specifications and technical data for each material including the composition and limitations, documentation of qualified tested firestop systems to be used and manufacturer's installation instructions to comply with Section 1300.
- B. Manufacturer's engineering judgment identification number and document details when no qualified tested system is available for an application. Engineering judgment must include both project name and contractor's name who will install firestop system as described in document.
- C. Submit material safety data sheets and certificates of compliance provided with product delivered to job-site.
- D. VOC Content Limitations: For firestop system products, submit documentation of conformance with LEED EQ Credit 4.1 "Low-Emitting Materials, Adhesives, and Sealants."

### INSTALLER QUALIFICATIONS

- A. Engage an experienced Installer who is certified, licensed, or otherwise qualified by the firestopping manufacturer as having been provided the necessary training to install manufacturer's products per specified requirements. A supplier's willingness to sell its firestopping products to the Contractor or to an Installer engaged by the Contractor does not in itself confer qualification on the buyer.
- B. Installation Responsibility: assign installation of through-penetration firestop systems and fire-resistive joint systems in Project to a **single source SPECIALTY FIRESTOP CONTRACTOR**.
- C. The work is to be installed by a contractor with at least one of the following qualifications:
  1. UL Approved Contractor
  2. FM 4991 Approved Contractor
- D. Firm with not less than 3 years experience with complete fire stop installations.

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E.	Successfully completed not less than 3 comparable scale projects using similar systems.

### DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials undamaged in manufacturer's clearly labeled, unopened containers, identified with brand, type, and UL label where applicable.
- B. Coordinate delivery of materials with scheduled installation date to allow minimum storage time at job-site.
- C. Store materials under cover and protect from weather and damage in compliance with manufacturer's requirements, including temperature restrictions.
- D. Comply with recommended procedures, precautions or remedies described in material data safety sheets as applicable.
- E. Do not use damaged or expired materials.

### PROJECT CONDITIONS

- A. Do not use materials that contain flammable solvents.
- B. Schedule installation of firestopping after completion of penetrating item installation but prior to covering or concealing of openings.
- C. Verify existing conditions and substrates before starting work and correct unsatisfactory conditions before proceeding.
- D. Weather conditions: Do not proceed with installation of firestop materials when temperatures exceed the manufacturer's recommended limitations for installation printed on product label and product data sheet.
- E. During installation, provide masking and drop cloths to prevent firestopping materials from contaminating any adjacent surfaces.

### PART 2 – PRODUCTS

#### FIRESTOPPING, GENERAL

- A. Provide firestopping composed of components that are compatible with each other, the substrates forming openings, and the items, if any, penetrating the firestopping under conditions of service and application, as demonstrated by the firestopping manufacturer based on testing and field experience.
  - 1. The use of multiple manufacturers' materials within the context of the same opening voids all warranties and will not be accepted.
- B. Provide components for each firestopping system that are needed to install fill material. Use only components specified by the firestopping manufacturer and approved by the qualified testing agency for the designated fire-resistance-rated systems.



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C.	Firestopping Materials are either “cast-in-place” (integral with concrete placement) or “post installed.” Provide cast-in-place firestop devices prior to concrete placement.
D.	Seal all openings or voids made by penetrations to ensure an air and water resistant seal.
E.	Consult with mechanical engineer, project manager, and damper manufacturer prior to installation of through-penetration firestop systems that might hamper the performance of fire dampers as it pertains to duct work.
F.	Protect materials from damage on surfaces subjected to traffic.
G.	Apply a suitable bond-breaker to prevent three-sided adhesion in applications where this condition might occur such as the intersection of a gypsum wallboard/steel stud wall to floor or roof assembly where the joint is backed by a steel ceiling runner or track.
H.	Where joint application is exposed to the elements, fire-resistive joint sealant must be approved by manufacturer for use in exterior applications and shall comply with ASTM C-920, “Specification for Elastomeric Joint Sealants”.

### ACCEPTABLE MANUFACTURERS

- A. Subject to compliance with through penetration firestop systems (XHEZ), joint systems (XHBN), and perimeter firestop systems (XHDG) listed in Volume 2 of the UL Fire Resistance Directory; provide products of the following manufacturers as identified below:
1. Specified Technologies Inc. STI Somerville, New Jersey  
800.992.1180/www.stifirestop.com
  2. Hilti, Inc., Tulsa, Oklahoma  
800-879-8000/www.us.hilti.com
- Provide products from the above acceptable manufacturer/s; **no substitutions will be accepted.**

### PERFORMANCE REQUIREMENTS

- A. Provide products that upon curing do not re-emulsify, dissolve, leach, breakdown or otherwise deteriorate over time from exposure to atmospheric moisture, sweating pipes, ponding water or other forms of moisture characteristic during and after construction.
- B. Provide firestop sealants sufficiently flexible to accommodate motion such as pipe vibration, water hammer, thermal expansion and other normal building movement without damage to the seal.
- C. Pipe insulation shall not be removed, cut away or otherwise interrupted through wall or floor openings. Provide products appropriately tested for the thickness and type of insulation utilized.

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D.	Fire rated pathway devices shall be the preferred product and shall be installed in all locations where frequent cable moves, add-ons and changes will occur.
E.	When mechanical cable pathways are not practical, openings within walls and floors designed to accommodate voice, data and video cabling shall be provided with re-entenable products specifically designed for retrofit.
F.	Penetrants passing through fire-resistance rated floor-ceiling assemblies contained within chase wall assemblies shall be protected with products tested by being fully exposed to the fire outside of the chase wall. Systems within the UL Fire Resistance Directory that meet this criterion are identified with the words "Chase Wall Optional".
G.	Provide fire-resistive joint sealants sufficiently flexible to accommodate movement such as thermal expansion and other normal building movement without damage to the seal.
H.	Provide fire-resistive joint sealants designed to accommodate a specific range of movement and tested for this purpose in accordance with a cyclic movement test criteria as outlined in Standards, ASTM E-1399, ASTM E-1966 or ANSI/ UL 2079.
I.	Provide through-penetration firestop systems and fire-resistive joint systems subjected to an air leakage test conducted in accordance with the Standards, ANSI/ UL1479 for penetration and ANSI/UL2079 for joint systems, with published L-Ratings for ambient and elevated temperatures as evidence of the ability of the firestop system to restrict the movement of smoke.
J.	Provide T-Rating Collar Devices tested in accordance with ASTM E-814 or ANSI/UL1479 for metallic pipe penetrations requiring T-Ratings per the applicable building code.

### MATERIALS

- A. Use only firestop products that have been UL 1479, ASTM E 814 or UL 2079, ASTM E 1966 tested for specific fire-rated construction conditions conforming to construction assembly type, penetrating item type, annular space requirements, and fire-rating involved for each separate instance.
- B. Pre-installed firestop devices for use with noncombustible and/or combustible pipes (closed and open systems), conduit, and/or cable bundles penetrating concrete floors, the following products are acceptable:
  - 1. STI Cast-In Place Devices
    - a. CD200, CD300, CD400, CD600 Cast-In Place for combustible OR non-combustible penetrants, or CD200M, CD300M, CD400M, CD600M Cast-In Place for non-combustible penetrants
    - b. Add metal deck adapter kit/s CD200DK, CD300DK, CD400DK, CD600DK on any corrugated metal deck to bridge flutes
    - c. Add height adapter CD200X, CD300X, CD400X, CD600X for concrete slabs which exceed 8" overall thickness
    - d. Add tub box kit CD200T for use with tub installations

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	<ol style="list-style-type: none"><li>2. Hilti CP 680P or CP 680M Cast-In Place Firestop Devices:<ol style="list-style-type: none"><li>a. Add Aerator adapter when used in conjunction with an Aerator (Sovent system)</li><li>b. Add metal deck adapter kit if utilizing CP 680P or M on corrugated metal deck.</li><li>c. Add height extension if utilizing CP 680P or M in concrete slabs thicker than 8".</li><li>d. Add Hilti Water Module (2" up to 6") to achieve UL W-Rating</li><li>e. Add Hilti TOP SEAL (1/2" up to 2") to achieve UL W-Rating</li></ol></li><li>3. Hilti CP 681 Tub Box Kit for use with bath tub installations.</li><li>4. Hilti Toilet Flange for use with floor outlet water closets.</li><li>5. Hilti coupling sleeve for use with floor, shower or general purposes drains</li></ol>
C.	<p>Fire rated cable pathway devices shall be used for ALL low-voltage, video, data and voice cabling, optical fiber raceways and certain high-voltage cabling where frequent cable moves, adds and changes may occur. Pathways required for high voltage cabling will be detailed on the prints. Such devices shall:</p> <ol style="list-style-type: none"><li>1. Meet the hourly fire-rating of fire rated wall and or floor penetrated.</li><li>2. Be tested for the surrounding construction and cable types involved.</li><li>3. Have UL Systems permitting cable loads from; <i>"Zero to 100% Visual Fill."</i> This requirement eliminates need for fill-ratio calculations to be made by cable technicians to ensure cable load is within maximum allowed by UL System.</li><li>4. Not have inner fabric liner that tightens around and compresses cables tightly together encouraging alien cross-talk interference.</li><li>5. Be <i>"Zero-Maintenance"</i>, zero-maintenance is defined as; No action required by cabling technician to open and/or close pathway for cable moves, adds or changes, such as, but not limited to:<ol style="list-style-type: none"><li>a. Opening or closing of doors.</li><li>b. Spinning rings to open or close fabric liner.</li><li>c. Removal and or replacement of any material such as, but not limited to, firestop caulk, putty, pillows, bags, foam muffins, foam, foam plugs, foam blocks, or foam closures of any sort.</li><li>d. Furnish letter from manufacturer certifying compliance with this definition of <i>"Zero-Maintenance"</i>.</li></ol></li><li>6. Pathways shall be engineered such that two or more devices may be ganged together for larger cable capacities.</li><li>7. Pathways shall be engineered to be re-enterable so they can be retrofitted and removed from around existing cables without cutting and re-splicing them.</li></ol>

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|                | <ol style="list-style-type: none"><li>8. Cable Pathway Devices passing vertically through floors shall have equal F &amp; T Rating. (See UL System # F-A-3037, Item #4 “EZ-PATH Grid T-Rating Kit” Part # TRK444)</li><li>9. Affix adhesive wall label immediately adjacent to devices to communicate to future cable technicians, authorities having jurisdiction and others the manufacturer of the device and the corresponding UL System number installed.</li></ol>  |
| D.             | As an alternate to using a fire-rated cable pathway device for single low voltage cables (up to 0.27 in. (7 mm) O.D) penetrating one or two-hour, gypsum board/stud wall assemblies, either as a through-penetration or as a membrane-penetration, a fire-rated cable grommet may be substituted. The firestop shall consist of a molded, two-piece, plenum-rated grommet having a foam fire and smoke sealing membrane that conforms to the outside diameter of the individual cable. The grommet product shall be capable of locking into place to secure the cable penetration within the wall assembly. The grommet shall be UL Classified and tested to the requirements of ASTM E814 (UL1479) and CAN/ULC S115.   |
| E.             | Sealants, caulking materials, or foams for use with non-combustible items including steel pipe, copper pipe, rigid steel conduit and electrical metallic tubing (EMT), the following products are acceptable: <ol style="list-style-type: none"><li>1. STI Triple S Intumescent Firestop Sealant</li><li>2. STI LCI Intumescent Firestop Sealant</li><li>3. STI LC Endothermic Firestop Sealant</li><li>4. STI AS Elastomeric Firestop Spray</li><li>5. STI PEN or PENSL Silicone Firestop Sealant</li><li>6. Hilti FS-ONE Intumescent Firestop Sealant</li><li>7. Hilti CP 604 Self-leveling Firestop Sealant</li><li>8. Hilti CP 620 Fire Foam</li><li>9. Hilti CP 606 Flexible Firestop Sealant</li><li>10. Hilti CP 601S Elastomeric Firestop Sealant</li></ol> |
| F.             | Sealants or caulking materials for use with sheet metal ducts, the following products are acceptable: <ol style="list-style-type: none"><li>1. STI Triple S Intumescent Firestop Sealant</li><li>2. STI LCI Intumescent Firestop Sealant</li><li>3. STI LC Endothermic Firestop Sealant</li><li>4. STI AS Elastomeric Firestop Spray</li><li>5. STI PEN or PENSL Silicone Firestop Sealant</li><li>6. Hilti CP 601S Elastomeric Firestop Sealant</li><li>7. Hilti CP 606 Flexible Firestop Sealant</li><li>8. Hilti FS-ONE Intumescent Firestop Sealant</li></ol>   |
| G.             | Sealants, caulking or spray materials for use with fire-rated construction joints and other gaps, the following products are acceptable: <ol style="list-style-type: none"><li>1. STI AS Elastomeric Firestop Spray</li><li>2. STI Fast Tack Firestop Spray</li></ol>   |

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	<ol style="list-style-type: none"><li>3. STI ES Elastomeric Firestop Sealant</li><li>4. STI LC Endothermic Firestop Sealant</li><li>5. STI Speed Flex Joint Solution System</li><li>6. STI PEN or PENSL Silicone Firestop Sealant</li><li>7. Hilti CP 672 Speed Spray</li><li>8. Hilti CP 672 FC "FAST CURE" Speed Spray</li><li>9. Hilti CP 601 S Elastomeric Firestop Sealant</li><li>10. Hilti CP 606 Flexible Firestop Sealant</li><li>11. Hilti CP 604 Self-leveling Firestop Sealant</li></ol>
H.	Pre-formed mineral wool designed to fit flutes of metal profile deck and gap between top of wall and metal profile deck; as a backer for spray material. <ol style="list-style-type: none"><li>1. Hilti CP 777 Speed Plugs</li><li>2. Hilti CP 767 Speed Strips</li><li>3. Any manufacturer who can provide a 4PCF or greater mineral wool such as Thermafiber, Roxul etc. tested to all applicable standards</li></ol>
I.	Intumescent sealants, caulking materials for use with combustible items (penetrants consumed by high heat and flame) including insulated metal pipe, PVC jacketed, flexible cable or cable bundles and plastic pipe, the following products are acceptable: <ol style="list-style-type: none"><li>1. STI Triple S Intumescent Firestop Sealant</li><li>2. STI LCI Intumescent Firestop Sealant</li><li>3. Hilti FS-ONE Intumescent Firestop Sealant</li></ol>
J.	Foams, intumescent sealants, or caulking materials for use with flexible cable or cable bundles, the following products are acceptable: <ol style="list-style-type: none"><li>1. STI Triple S Intumescent Firestop Sealant</li><li>2. STI LCI Intumescent Firestop Sealant</li><li>3. STI SSP Intumescent Firestop Putty</li><li>4. STI CS105 Cable Spray</li><li>5. STI FS Ready Sleeve or FSR Split Sleeve Pathway Devices</li><li>6. Hilti FS-ONE Intumescent Firestop Sealant</li><li>7. Hilti CP 620 Fire Foam</li><li>8. Hilti CP 601S Elastomeric Firestop Sealant</li><li>9. Hilti CP 606 Flexible Firestop Sealant</li></ol>
K.	Non-curing, re-penetrable intumescent putty or foam materials for use with flexible cable or cable bundles, the following products are acceptable: <ol style="list-style-type: none"><li>1. STI SSP Intumescent Firestop Putty</li><li>2. STI FP200, FP400 Intumescent Firestop Plug</li><li>3. STI SSB Intumescent Firestop Pillows</li><li>4. STI FS Ready Sleeve or FSR Split Sleeve Pathway Devices</li><li>5. Hilti CP 618 Firestop Putty Stick</li><li>6. Hilti CP 658T Firestop Plug</li></ol>

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L.	Wall opening protective materials for use with U.L. listed metallic and specified nonmetallic outlet boxes, the following products are acceptable: <ol style="list-style-type: none"><li>1. STI SSP4S or SSP9S Intumescent Putty Pad</li><li>2. STI EP44 or EP45 Intumescent Box Insert</li><li>3. Hilti CP 617 Firestop Putty Pad</li><li>4. Hilti Firestop Box Insert</li><li>5. Hilti FS 657 FIRE BLOCK</li></ol>
M.	Firestop collar or wrap devices attached to assembly around combustible plastic pipe (closed and open piping systems), the following products are acceptable: <ol style="list-style-type: none"><li>1. STI LCC Intumescent Firestop Collars</li><li>2. STI RTC Intumescent Range Taking Collars</li><li>3. STI SSWRED or SSWBLU Intumescent Wrap Strips</li><li>4. Hilti CP 643 N Firestop Collar</li><li>5. Hilti CP 644 Firestop Collar</li><li>6. Hilti CP 648E Endless Wrap Strips</li><li>7. Hilti CP 648S Single Wrap Strips</li></ol>
N.	Materials used for large openings and complex penetrations made to accommodate cable trays and bundles, multiple steel and copper pipes, electrical busways in raceways, the following products are acceptable: <ol style="list-style-type: none"><li>1. STI SSM Firestop Mortar</li><li>2. STI SSB Intumescent Firestop Pillows</li><li>3. STI CS Intumescent Composite Sheet</li><li>4. STI Triple S Intumescent Firestop Sealant</li><li>5. STI LCI Intumescent Firestop Sealant</li><li>6. Hilti CP 637 Firestop Mortar</li><li>7. Hilti FS 657 FIRE BLOCK</li><li>8. Hilti CP 620 Fire Foam</li><li>9. Hilti CP 675T Firestop Board</li></ol>
O.	Non-curing, re-penetrable materials used for large size/complex penetrations made to accommodate cable trays and bundles, multiple steel and copper pipes, electrical busways in raceways, the following products are acceptable: <ol style="list-style-type: none"><li>1. STI SSB Intumescent Firestop Pillows</li><li>2. STI CS Intumescent Composite Sheet</li><li>3. Hilti FS 657 FIRE BLOCK</li><li>4. Hilti CP 675T Firestop Board</li></ol>
P.	Sealants or caulking materials used for openings between structurally separate sections of wall and floors, the following products are acceptable: <ol style="list-style-type: none"><li>1. STI AS Elastomeric Firestop Spray</li><li>2. STI ES Elastomeric Firestop Sealant.</li><li>3. STI LC Endothermic Firestop Sealant</li></ol>

## DIVISION 10 - SPECIALTIES

Section Number	Title
	4. STI Fast Tack Silicone Firestop Spray
	5. STI PEN or PENSL Silicone Firestop Sealant
	6. Hilti CP 672 Speed Spray
	7. Hilti CP 601S Elastomeric Firestop Sealant
	8. Hilti CP 606 Flexible Firestop Sealant
	9. Hilti CP 604 Self-Leveling Firestop Sealant
Q.	For blank openings made in fire-rated wall or floor assemblies, where future penetration of pipes, conduits, or cables is expected, the following products are acceptable: <ul style="list-style-type: none"><li>1. STI SSP Intumescent Firestop Putty</li><li>2. STI FS Ready Sleeve or FSR Split Sleeve Pathway Device</li><li>3. STI FP Intumescent Firestop Plug</li><li>4. STI SSB Intumescent Firestop Pillow</li><li>5. Hilti FS 657 FIRE BLOCK</li><li>6. Hilti CP 658T Firestop Plug</li></ul>
R.	Provide a firestop system with a "F" Rating as determined by UL 1479 or ASTM E814 which is equal to the time rating of construction being penetrated.
S.	Provide a firestop system with an Assembly Rating as determined by UL 2079 or ASTM E 1966 which is equal to the time rating of construction joint assembly.
T.	Provide a firestop system with a "T" Rating where applicable as determined by UL 1479 or ASTM E814 which is equal to the "F" Rating of construction being penetrated. Please note "T" Ratings are not required in walls or when a penetration through the floor exists within a wall cavity.

### PART 3 – EXECUTION

#### PREPARATION

- A. Verification of Conditions: Examine areas and conditions under which work is to be performed and identify conditions detrimental to proper or timely completion.
  - 1. Verify penetrations are properly sized and in suitable condition for application of materials.
  - 2. Surfaces to which firestop materials will be applied shall be free of dirt, grease, oil, rust, laitance, release agents, water repellents, and any other substances that may affect proper adhesion.
- B. Provide masking and temporary covering to prevent soiling of adjacent surfaces by firestopping materials.
- C. Comply with manufacturer's recommendations for temperature and humidity conditions before, during and after installation of firestopping.
- D. Do not proceed until unsatisfactory conditions have been corrected.

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## COORDINATION

- A. Coordinate construction of openings, penetrations and construction joints to ensure that the fire stop systems are installed according to specified requirements.
- B. Coordinate sizing of sleeves, openings, core-drilled holes, or cut openings to accommodate through-penetration fire stop systems. Coordinate construction and sizing of joints to ensure that fire-resistive joint systems are installed according to specified requirements.
- C. Coordinate fire stopping with other trades so that obstructions are not placed in the way prior to the installation of the fire stop systems.
- D. Do not cover up through-penetration fire stop and joint system installations that will become concealed behind other construction until each installation has been examined by the building inspector, per requirements of Section 109, IBC 2000.

## INSTALLATION

- A. Regulatory Requirements: Install firestop materials in accordance with UL Fire Resistance Directory or Omega Point Laboratories Directory.
- B. Manufacturer's Instructions: Comply with manufacturer's instructions for installation of through penetration and construction joint materials.
  - 1. Seal all holes or voids made by penetrations to ensure an air and water resistant seal.
  - 2. Consult with mechanical engineer, project manager, and damper manufacturer prior to installation of UL firestop systems that might hamper the performance of fire dampers as it pertains to duct work.
  - 3. Protect materials from damage on surfaces subjected to traffic.

## FIELD QUALITY CONTROL

- A. Examine sealed penetration areas to ensure proper installation before concealing or enclosing areas.
- B. Keep areas of work accessible until inspection by applicable code authorities.
- C. Inspection of through-penetration firestopping shall be performed in accordance with ASTM E 2174, "Standard Practice for On-Site Inspection of Installed Fire Stops" or other recognized standard.
- D. Perform under this section patching and repairing of firestopping caused by cutting or



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penetrating of existing firestop systems already installed by other trades.

- E. Manufacturer's Field Services: During Installation, provide periodic destructive testing inspections to assure proper installation/application. After installation is complete, submit findings in writing indicating whether or not the installation of the tested system identified was installed correctly.

### IDENTIFICATION & DOCUMENTATION

- A. The firestop contractor is to supply documentation for each single application addressed. This documentation is to identify each penetration and joint location on the entire project.
- B. Copies of these documents are to be provided to the general contractor at the completion of the project.
- C. Identify through-penetration firestop systems with self-adhesive, preprinted labels. Attach labels permanently to surfaces of penetrated construction on both sides of each firestop system installation where labels will be visible to anyone seeking to remove penetrating items or firestop systems. Include the following information on labels:
  - 1. Installer/Contractor's Name, address, and phone number.
  - 2. Through-Penetration firestop system designation of applicable testing and inspecting agency.
  - 3. Date of Installation.
  - 4. Through-Penetration firestop system manufacturer's name.
- D. Fire Stop systems must not be concealed from view before being inspected and approved.
- E. Walk through visual inspections should be made during the firestop installation.
- F. When necessary or required, destructive evaluation will be made on various types of firestop systems.
- G. Construction documents detailing the firestop locations and systems must be kept on site to assist in the conduct of the inspection.
- H. Certificate of installation shall be provided from the installing Contractor.

### ADJUSTING AND CLEANING

- A. Remove equipment, materials and debris, leaving area in undamaged, clean condition.
- B. Clean all surfaces adjacent to sealed holes and joints to be free of excess firestop materials and soiling as work progresses.

### LABOR USE TO INSTALL FIRESTOP SYSTEMS

- A. To ensure complete harmony on the project site, the installation of each scope of work is to be performed jurisdictionally correct per existing trade agreements.

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<b>Section Number</b>	<b>Title</b>
<b>10530</b>	<b>PROTECTIVE COVERS</b> Protective covers are required for exterior compressor units.
10532	Walkway Covers Covers installed in any traffic area for subsurface utilities shall be securable with a positive latching mechanism.
10538	Canopies
<b>10600</b>	<b>PARTITIONS</b>
10630	Portable Partitions, Screens and Panels
<b>10670</b>	<b>STORAGE SHELVING</b>
10675	Metal Storage Shelving
10688	Prefabricated Wood Storage Shelving Plywood shelving is preferred over particle board or solid wood. Minimum 3/4" thick with edge facing.
<b>10750</b>	<b>TELEPHONE SPECIALTIES</b> (Refer to division 26)
<b>10800</b>	<b>TOILET AND BATH ACCESSORIES</b>
10810	Toilet Accessories  Commercial Accessories are required in all public restrooms.  <ol style="list-style-type: none"><li>1. Paper towel Dispensers: Kimberly Clark, model 9736 (single) or model 9755 (double), 2' X 2' lever handle operated.</li><li>2. Toilet Tissue Dispenser: CORMATIC 2 roll. Model 4c from Georgia Pacific Commercial Products. Color as selected by the Owner.</li><li>3. Soap Dispensers: 1 dispenser per 2 sinks. Black Color Waxie Nice Touch 800 ml</li><li>4. Sanitary napkin receptacles: Wall mounted, Stainless steel, one unit per each ladies stall or 1 unit common to 2 stalls.</li><li>5. Trash receptacles: Built-in independent of paper towel unit. Stainless steel rectangular.</li></ol> ADA accessible accessories shall be provided, as required by latest edition of ADAAG and the IBC.
10820	Bath Accessories ADA accessible accessories shall be provided, as required by latest edition of ADAAG and the IBC.
<b>10900</b>	<b>WARDROBE AND CLOSET SPECIALTIES</b> Standard plastic laminate-faced doors are acceptable. European hinges are preferred.

\*\*\* END OF SECTION \*\*\*