



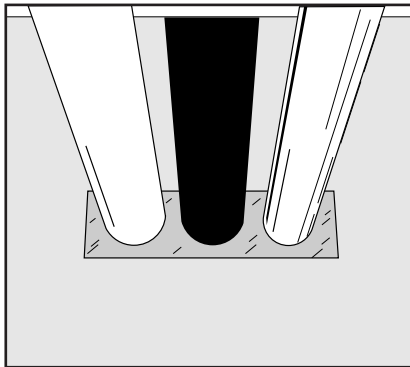
SERIES SSM FIRESTOP MORTAR

APPLICATIONS

SpecSeal® Firestop Mortar is used to seal through-penetrations as well as construction gaps and blank openings. This product is also used in conjunction with other SpecSeal® Firestop Products such as SpecSeal® Firestop Collars and Wrap Strips.

SpecSeal® Firestop Mortar has been tested for a wide range of penetrants including metallic pipes, cables, cable trays (both steel and aluminum), as well as combustible penetrants such as plastic pipes or insulated metallic pipes (when used in conjunction with other SpecSeal® intumescent products).

SpecSeal® Firestop Mortar is suitable for openings of all sizes. Its method of application makes it specifically useful for medium to large openings with simple to very complicated combinations of penetrants.



PHYSICAL PROPERTIES

TABLE A:	
Color	Pale red
Flame Spread	0*
Smoke Developed	<5*
Odor	No perceptible odor
Density (as shipped)	Bulk approx. .45 – .55
Density Mixed (wet)	.80g/L ± .03 (6.4 – 6.9 lb./gal.)
Density (dry mortar)	.65 g/L (5.4 lb./gal., 40.5 lb./cu. ft.)
Ratio Water/Mortar	14.3/22 to 17.6/22
Yield (per 22 lb.)	1,250 – 1,425 cu. in. (20.5 - 23.4 L)
Shelf Life	No Limit
Application Temp.	35°F – 100°F (2°C - 38°C)
Open Time	30 Minutes working time
In Service Temp.	-10°F (-23°C) - 200°F (93°C)
Storage Temp.	No Limit

* Tested to ASTM E84 (UL723) at 14% surface coverage (modified test for sealants and caulks)

PRODUCT DESCRIPTION

SpecSeal® Firestop Mortar is an economical, light-weight portland cement-based firestop product. This passive (non-intumescent) material utilizes a combination of heat sinking and insulating properties to provide an extremely high level of fire resistance.

SpecSeal® Firestop Mortar mixes with water to form a non shrinking, high yield mortar that may be applied by pouring, pumping, or troweling.

Its low density and light weight means that less forming as well as less forming support is required. Its low density also makes re-penetration for retrofitting a simple task.

SpecSeal® Firestop Mortar is designed to dry quickly and will not crack or spall due to freezing or changes in temperature. Its adhesion is due to a chemical bond thus most installations require little or no mechanical anchoring.

FEATURES

- **Light Weight:** Less forming and support required.
- **Fast Drying:** Forms come down faster!
- **Low Density:** Easy retrofit!
- **Economical:** Highest yield per pound means lower installed cost.
- **Wide Range of Application:** Includes aluminum cable tray.
- **Red Color** for easy identification and inspection.
- **Chemical Adhesion** reduces the need for expensive and time consuming concrete fasteners.
- **Versatile Performer** for a wide range of complex applications.
- **Paintable**

PERFORMANCE

SpecSeal® Firestop Mortar is the basis for systems that meet the exacting criteria of ASTM E814 (UL1479). Systems have been tested for all common forms of masonry construction and most common penetrants with ratings up to 3 hours.

STI designed firestop systems are engineered to maximize the fire resistance of the seal by not only sealing off the spread of fire and hot gasses but also by minimizing the amount of heat conducted through the assembly. Thus all systems have been designed to provide T Ratings capable of matching the rating of the wall or floor assembly (where possible) when tested without penetrants.

CLASSIFIED
UL US
3L73
31X5

FILL, VOID OR CAVITY MATERIALS CLASSIFIED BY UNDERWRITERS LABORATORIES INC. © FOR USE IN THROUGH-PENETRATION FIRESTOP SYSTEMS.

SEE UL FIRE RESISTANCE DIRECTORY

UNDERWRITERS LABORATORIES INC. © CLASSIFIED WALL PROTECTION MATERIAL. SEE PRODUCT CATEGORY IN UL FIRE RESISTANCE DIRECTORY

CLASSIFIED FILL, VOID, OR CAVITY MATERIALS FOR USE IN THROUGH-PENETRATION FIRESTOP SYSTEMS. SEE UL DIRECTORY OF PRODUCTS CERTIFIED FOR CANADA AND UL FIRE RESISTANCE DIRECTORY

FM
APPROVED

SPECIFICATIONS

The firestopping material shall be a light-weight, fast drying portland cement based material. The density of the wet mortar shall be = 52 lb./cu.ft. The density of the dry mortar shall be = 45 lb./cu.ft. The specified mortar shall be approved for a wide range of applications including combustible and noncombustible penetrants when used by itself or in combination with other products from the same manufacturer. The firestop mortar shall be UL Classified and/or FM Systems Approved and tested to the requirements of ASTM E814 (UL1479).

SPECIFIED DIVISIONS

- DIV. 7 07840 Through-Penetration Firestopping
- DIV. 13 13900 Special Construction Fire Suppression & Supervisory Systems
- DIV. 15 15250 Mechanical Insulation – Fire Protection
- DIV. 16 16050 Basic Electrical Materials & Methods



INSTALLATION INSTRUCTIONS

GENERAL: STORE IN A DRY AREA UNTIL READY FOR USE. Areas to be protected must be clean and free of oil, loose dirt, rust or scale. Installation temperatures must be between 35°F and 100°F. (2°C and 38°C)

SYSTEM SELECTION: Some typical installations have been illustrated here. Space limitations preclude highly detailed information pertaining to individual application systems. Please consult the STI referenced drawing as well as the UL® Fire Resistance Directory for additional information.

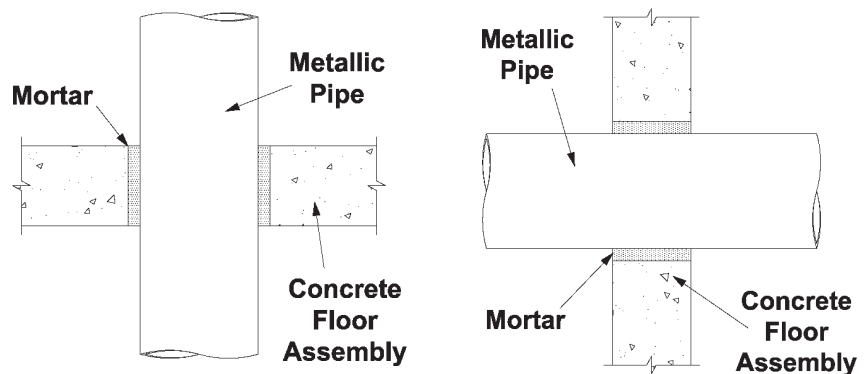
FORMING: Forming is not required as part of the system, but may facilitate installation. In systems where forming is required, plywood or foam insulation boards may be used. In smaller openings, mineral fiber, backer rod or other suitable materials may be used. Adequately support all forming material to support the wet weight of the mortar (see TABLE A). Recess forming material to a depth which allows for the proper depth of fill material.

Expanded metal lath makes an excellent permanent form and will add reinforcement in larger openings. Mix mortar to a stiff consistency to prevent seepage.

NOTE: The use of flammable forming materials is not recommended for permanent installations because such use may violate local fire or building codes. These materials are suitable only for temporary use. Remove temporary forms after mortar sets.

FILL MATERIAL: SpecSeal® Firestop Mortar can be mixed with water using a standard mortar mixer, plastering machine (for installation of larger volumes), or mixed by hand in smaller amounts. When purchased in poly pails, adequate room is provided to allow mixing in the pail using a suitable pail mixer. The ratio of water to mortar varies according to the desired method of application (see TABLE B). A lower ratio of water to mortar mix will produce a stiffer mortar for troweling. The higher ratio will produce a self-leveling consistency.

Fig. 1: METALLIC PIPE PENETRATIONS - CONCRETE/MASONRY FLOORS & WALLS



UL SYSTEM C-AJ-1089
F Rating: 3 hr • T Rating: 1/2 hr
Steel or Iron Pipe: ≤6", EMT: ≤4"
Annulus: Nominal 11/16"
Mortar Depth: 1"

Fig. 2: MULTIPLE PENETRATIONS - WALLS

UL SYSTEM C-AJ-0015
F Rating: 2,3 hr • T Rating:
2,3 hr
Blank Opening
Tested Opening Size: 576 in²

UL SYSTEM C-AJ-8016
F Rating: 3 hr • T Rating: 0 hr
Steel or Aluminum Cable Trays
Steel, Iron, Copper Pipe, Rigid
Conduit, EMT
Tested Opening Size: 576 in²

UL SYSTEM C-AJ-8035
F Rating: 3 hr • T Rating: 0 hr
Copper or Aluminum Busways
Tested Opening Size: 576 in²

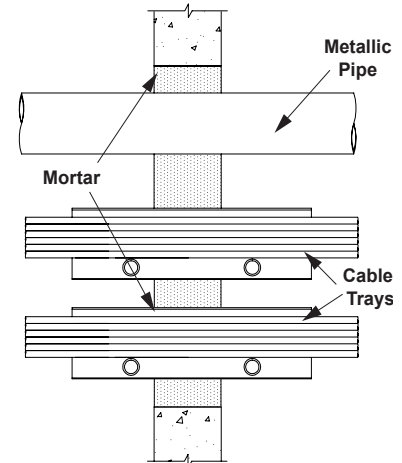


TABLE B: WATER TO MORTAR RATIOS AND YIELDS

Dry Mortar Mix	Trowel (Stiff Mix)			Self Leveling**		
	H ₂ O Lb	H ₂ O Pints	Yield in ³	H ₂ O Lb	H ₂ O Pints	Yield in ³
1 Pail or Bag (22 Lb.)	14.3	13.8	1,250	17.5	16.8	1,400
1 Gallon (4.17 Lb.)	2.71	2.6	236	3.3	3.2	265
1 Lb.	.65	.63	57	.8	.75	63

NOTE: ALL AMOUNTS SHOWN ABOVE ARE APPROXIMATE.

** DO NOT EXCEED MAXIMUM AMOUNTS LISTED IN THESE COLUMNS.

WEIGH WATER SEPARATELY IN PAIL. ADD ONLY ENOUGH TO ACHIEVE DESIRED CONSISTENCY. DO NOT USE MORE WATER THAN INDICATED.

Adhesion of the mortar to masonry surfaces will be enhanced by dampening contact surfaces prior to application. **INSTALL MORTAR IMMEDIATELY AFTER MIXING.**

CLEANUP: Clean adjacent wall or floor surfaces (as well as tools and mixing equipment) immediately using water. Consult material safety data sheet (MSDS) for additional information on the safe handling, use, storage and disposal of this product.

RETROFITTING: SpecSeal® Mortar may be drilled through using a wood bit, a twist drill, or by twisting a screw driver through the dry mortar. Care should be exercised to avoid damaging adjacent cables or pipes. Reseal openings using SpecSeal® Mortar or SpecSeal® Sealant.

WATER RESISTANCE: SpecSeal® Mortar is porous (as are most products of this type). Use of a silicone-based masonry water sealer will seal this material against the penetration of moisture. Use of this product for penetrations through external walls is not recommended. Design all firestops so that water is directed away from the firestop.

INSTALLATION INSTRUCTIONS CONTINUED

PIPE PENETRATIONS

GENERAL: Figures 1 and 2 depict 3 hour-rated pipe penetrations of various types. Install SpecSeal® Firestop Mortar to a minimum depth of 4 1/2" (114 mm) in floors. A variety of 2 hour systems have been tested utilizing a 3 1/2" (89 mm) depth of mortar for penetrants including copper, steel, iron, insulated, and PVC pipes. See STI Product & Application Guide or consult factory for additional information. In solid concrete walls, mortar must be applied to a minimum depth of 4 1/2" (114 mm) and must be installed symmetrically at the center of the wall. For concrete block walls, it is suggested that the cavities in the blocks below the opening be stuffed with fiberglass insulation (or a similar material) to prevent the mortar from filling these areas. Mortar should then be troweled or formed to the full thickness of the blocks.

METALLIC PIPES: Steel, iron and copper pipes may be sealed using SpecSeal® Mortar installed to the above listed depths or thicknesses.

IMPORTANT NOTE: Portland cement-based materials such as SpecSeal® Firestop Mortar may cause galvanic corrosion of copper. Copper pipes must be protected with enamel paint or a water-proof tape such as aluminum foil tape prior to installation of the mortar.

INSULATED PIPES: SpecSeal® Firestop Mortar may be used in conjunction with SpecSeal® Intumescent Wrap Strips to firestop insulated pipe applications. Wrap pipe insulation with wrap strip, secure with steel tie wires, and position as shown in Figure 3 prior to pouring mortar. (Consult appropriate STI Design System Drawing for insulation type, thickness, and the appropriate number of wrap strips).

NON-METALLIC PIPES: Various designs have been tested and approved for non-metallic pipes utilizing SpecSeal® Firestop Mortar in combination with SpecSeal® Intumescent Products. Consult factory for specific recommendations.

ELECTRICAL, TELEPHONE, & DATA CABLES

Figure 2 depicts systems used for electrical cables and cable trays (both aluminum and steel). 4 1/2" (114 mm) depth of SpecSeal® Firestop Mortar is required for concrete floors or solid concrete walls. Concrete block walls should be filled to their entire depth (as described under PIPE PENETRATIONS, GENERAL). For smoke sealing, it is recommended that cables be adequately spaced so that mortar can surround all cables and seal all gaps.

MULTIPLE PENETRANTS

SpecSeal® Firestop Mortar (by itself and in combination with other SpecSeal® products) demonstrates a high degree of versatility. Combinations of the various penetrants listed above may be successfully sealed using SpecSeal® Mortar along with the appropriate installation method listed for each of the penetrants being installed. (Consult appropriate STI System Drawing or request a specific factory recommendation).

BLOCKOUTS, BLANKS, HOLE REDUCTION

SpecSeal® Firestop Mortar may be installed in openings that have been abandoned or in pre-activated openings (openings that have been created for later use). SpecSeal® Firestop Mortar may also be used to seal construction gaps in locations where movement is not required. Where movement is a factor, the mortar may be isolated using SpecSeal® Putty, Sealant or Wrap Strips (consult factory for recommendations). SpecSeal® Firestop Mortar has demonstrated an ability to exceed the T Ratings of concrete at equal thicknesses, thus meeting code requirements for matching or restoring the fire rating of the wall or floor. SpecSeal® Firestop Mortar may also be used as method of reducing annular space around penetrants.

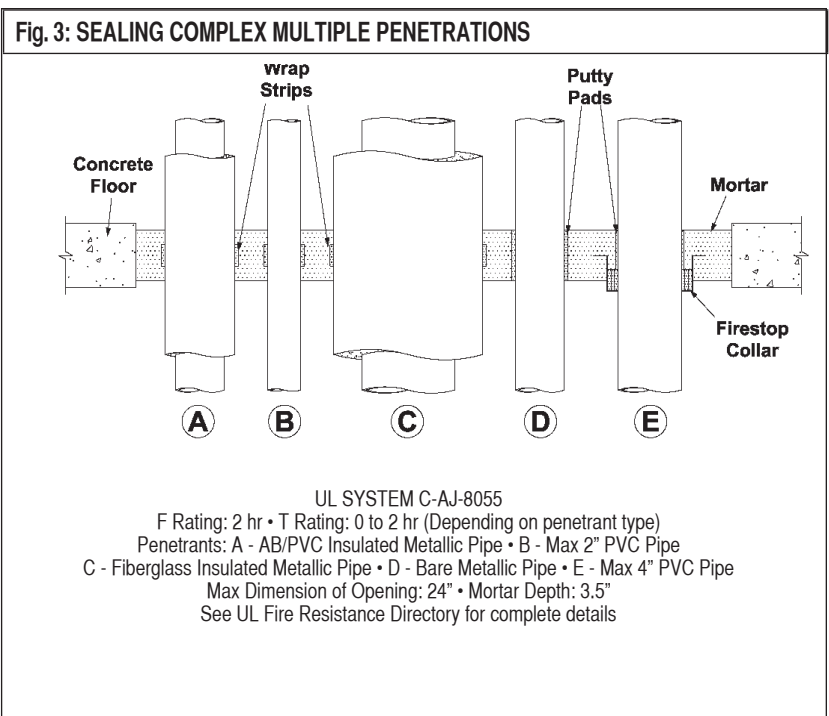
MAINTENANCE

Inspection: Installations should be inspected periodically for subsequent damage. Any damage should be repaired using SpecSeal® Firestop Mortar per the original approved design.

Retrofit: When adding or removing penetrants, care should be taken to minimize damage to the seal. Reseal using SpecSeal® Mortar at the original design depth or SpecSeal® Sealant at the depth required for the type of penetrant being sealed (See Sealant Product Data Sheet for details and requirements). **NOTE:** New penetrants of a different nature than the original design may require a totally new firestop design or extensive modifications to the existing design. Reseal all openings as per the requirements of the new design.

TECHNICAL SERVICE

Specified Technologies Inc. provides toll free technical support to assist in product selection and appropriate installation design. Design System Drawings suitable for submittal or specification purposes are available on request.



PRECAUTIONARY INFORMATION

WARNING: THIS PRODUCT IS CONDUCTIVE WHEN WET AND WILL CREATE A PATH TO GROUND UNTIL DRY. DO NOT INSTALL IN CONTACT WITH ENERGIZED ELECTRICAL CONDUCTORS. EXERCISE CARE WHEN ENERGIZING PENETRANTS. THIS PRODUCT CONTAINS PORTLAND CEMENT AND LIME. DO NOT INGEST. AVOID CONTACT WITH EYES. DO NOT INHALE.

Consult Material Safety Data Sheet for additional information on the safe handling and disposal of this material. Normal safety-wear such as rubber gloves, safety glasses, and dust mask used to handle conventional cement-based products should be worn.

AVAILABILITY

SpecSeal® Firestop Mortar is available from authorized STI distributors. Consult factory for the names and locations of the nearest sales representatives or distributors. SpecSeal® Products and available packages are listed below:

ORDERING INFORMATION

CAT. NO.	PACKAGING	WEIGHT	NOM. YIELD (MIXED)
SSM106	Poly Pail	22 Lb. (10 kg)	1,325 in ³ (21.6 liters)
SSM22B	Fiber Bag	22 Lb. (10 kg)	1,325 in ³ (21.6 liters)



Additional SpecSeal Products...

Series SSS Sealant

The industry's most versatile sealant provides the firestopping solutions for a wide range of combustible and noncombustible applications. Water-based intumescent sealant expands up to 8x!

Series LC Sealant

An economical latex firestop sealant for noncombustible applications. Non-halogenated, easy clean up, flexible, water-resistant!

SSP Firestop Putty

Available both in bar form and in pads, putty provides easy retrofit for through-penetrations and economical protection for electrical boxes.

SSB Firestop Pillows

Durable, monolithic pillows for installations requiring quick and easy retrofitting. Systems designed for pipes, cables and cable tray in all types of construction!

Pensil® Silicones

Sealants and foam for through-penetrations and construction joints. Unexcelled aging characteristics and flexibility. Lightweight, versatile and economical! The best choice for large or complex installations.

Intumescent Wrap Strips

Two grades of intumescent wrap strips provide an unmatched combination of flexibility, economy, and expansion (up to 30X). Systems for plastic pipes including FR Polypropylene up to 8" trade size!

Elastomeric Joint Seals

New economical products for sealing construction joints. Choose caulk or spray applied products tested to UL2079.

Molded Firestop Collars

Easy to install, economical protection for ABS and PVC pipes (both solid and foam core) as well as CPVC, PVDF, and FRPP. Collars available up to 6" trade size.

CITY OF NEW YORK MEA 29-92-M

IMPORTANT NOTICE: All statements, technical information, and recommendations contained herein are based upon testing believed to be reliable, but the accuracy and completeness thereof is not guaranteed.

WARRANTY

Specified Technologies Inc. manufactures its goods in a manner to be free of defects. Should any defect occur in its goods (within one year), Specified Technologies Inc., upon prompt notification, will at its option, exchange or repair the goods or refund the purchase price.

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