

ADDENDUM NO. 03

The following items shall take precedence over the drawings and specifications for the above named project and shall become a part of the contract documents. Where any item called for in the specifications, or indicated on the drawings, is not supplemented hereby, the original requirements shall remain in effect. Where any original item is amended, voided, or superseded hereby, the provisions of such item not specifically amended, voided or superseded shall remain in effect.

Acknowledge receipt of this Addendum in the appropriate space on the Bid Form. Failure to do so may subject the bidder to disqualification.

Attachments

Documents: 018000 – Applied Fireproofing, 018100 - Firestopping.

General

1. Bidders are hereby advised that information from bid documents which are not received from the sources listed in the Invitation for Bids is not legitimate and the bidder accepts full responsibility for any differences. RMF Engineering, Inc. has not authorized the scanning of their documents. Bidders should be aware that the plans are copyrighted and any unlawful use is subject to legal action. Bidders are further advised that the purchase and/or use of partial bid documents is not recommended and bidder will be responsible for any discrepancies which might have been avoided had a full set of documents been reviewed.
2. Bid closing date is scheduled for August 15, 2013 at 2:00pm at University of South Carolina, 743 Green Street, Conference Room 53, Columbia, SC 29208. The clock located in room 53 will be the official clock and used to determine bid closing. Late Bids will not be accepted as responsive.
3. Last day for addenda shall be August 9, 2013, 2:00 PM. All addenda will be posted to the USC purchasing website as listed on the SE-310. All addenda shall be acknowledged on the bid form.

Clarifications

1. Question – Do the new structural beams require fireproofing?
Answer – All new beams require fireproofing as specified in the attached 018000 specification. The patching of all existing beam fireproofing shall be as specified in the attached 018000 specification.
2. Question - On sheet MD1.01 Item # 20 under General Demolition Notes says prior to any work being performed the contractor shall perform baseline air and pressure readings for “All Existing Air Handling Units”. Is it your intent for the test & balance contractor to provide this and if so, do we know how many existing air handlers are in the building?

Answer – Please provide baseline air and pressure readings for the following:

1. 10"x6" duct in Corridor 441 after the disconnection point (refer to MD1.01).
2. All supply air ducts serving the fourth floor at the point where the duct exits the mechanical chase.

Yes, a TAB contractor shall provide these readings.

3. Question - On sheet A-100 under Sheet Note # 1 it calls for 7/8" wall molding. On sheet A-101 under Part 3, Execution Part C, sub-paragraph 1A, it calls for 2" wall molding. It also shows 2" wall molding on sheet A-101 Detail A2 under detail B & D. Please provide the correct size wall molding.

Answer – Please provide 2" wall molding.

Substitutions

- 1.

Revisions to Project Manual

- | <u>Item</u> | <u>Title and Revision</u> |
|-------------|--|
| 1. | Please add Specification 018000 – Applied Fireproofing to the Project Manual. Specification 018000 has been included in its entirety as part of this Addendum. |
| 2. | Please add Specification 018100 – Fire stopping to the Project Manual. Specification 018100 has been included in its entirety as part of this Addendum. |

Revisions to Drawings

- | <u>Item</u> | <u>Title and Revision</u> |
|-------------|---------------------------|
| 1. | None. |

END OF ADDENDUM NO. 3

SECTION 018000 – APPLIED FIREPROOFING

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Fireproofing of interior structural steel and decking.
- B. Patching of existing fireproofing.

1.2 REFERENCES AND DEFINITIONS

- A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
- B. ASTM E605 - Standard Test Methods for Thickness and Density of Sprayed Fire-Resistive Material (SFRM) Applied to Structural Members.
- C. ASTM E736 - Standard Test Method For Cohesion/Adhesion of Sprayed Fire-Resistive Materials Applied to Structural Members.
- D. ASTM E760 - Standard Test Method for Effect of Impact on Bonding of Sprayed Fire-Resistive Material Applied to Structural Members.
- E. ASTM E937 - Standard Test Method for Corrosion of Steel by Sprayed Fire-Resistive Material(SFRM) Applied to Structural Members.

1.3 SUBMITTALS

- A. See Section 01 33 00 - Submittal Procedures, for submittals procedures.
- B. Product Data: Provide data indicating product characteristics.
- C. Test Reports: Reports from reputable independent testing agencies for proposed products, indicating compliance with specified criteria, conducted under conditions
- D. Similar to those on project, for:
 - 1. Bond Strength.
 - 2. Bond Impact.
 - 3. Density.
 - 4. Fire tests using substrate materials similar those on project.
- E. Manufacturer's Field Reports: Indicate environmental conditions under which

fireproofing materials were installed.

1.4 FIELD CONDITIONS

- A. Do not apply spray fireproofing when temperature of substrate material and surrounding air is below 40 degrees F.
- B. Provide ventilation in areas to receive fireproofing during application and 24 hours afterward, to dry applied material.
- C. Provide temporary enclosure to prevent spray from contaminating air.

1.5 WARRANTY

- A. See Section 01 77 00 - Closeout Procedures, for additional warranty requirements.
- B. Correct defective Work within a five year period after Date of Substantial Completion.
 - 1. Include coverage for fireproofing to remain free from cracking, checking, dusting, flaking, spalling, separation, and blistering.
 - 2. Reinstall or repair failures that occur within warranty period.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Sprayed-On Cementitious Fireproofing:
 - 1. Grace Construction Products; Product Monokote MK-6:
www.na.graceconstruction.com.
 - 2. Southwest Fireproofing Products Company.; Product 5GP: www.sfrm.com.
- B. Substitutions: See Section 01 60 00 - Product Requirements.

2.2 FIREPROOFING ASSEMBLIES

- A. Provide assemblies as indicated on the drawings.

2.3 MATERIALS

- A. Sprayed Fire-Resistive Material for Interior Applications: Manufacturer's standard factory mixed material, which when combined with water is capable of providing the indicated fire resistance, and conforming to the following requirements:
 - 1. Composition: Portland-cement-based, not mineral fiber-based.
 - 2. Bond Strength: 150 psf, minimum, when tested in accordance with ASTM E736 when set and dry.

3. Dry Density: Minimum average density of 15 lb/cu ft, with minimum individual density of any test sample of 14 lb/cu ft, when tested in accordance with ASTM E605.
 4. Effect of Impact on Bonding: No cracking, spalling or delamination, when tested in accordance with ASTM E760.
 5. Corrosivity: No evidence of corrosion, when tested in accordance with ASTM E937.
 6. Surface Burning Characteristics: Maximum flame spread of 0 and maximum smoke developed of 0, when tested in accordance with ASTM E84.
- B. Existing Sprayed Fire Resistive Material: Provide patching of existing fireproofing compatible with existing system as determined by the fireproofing installer.

2.4 ACCESSORIES

- A. Primer Adhesive: Of type recommended by fireproofing manufacturer.
- B. Water: Clean, potable.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that surfaces are ready to receive fireproofing.
- B. Verify that clips, hangers, supports, sleeves, and other items required to penetrate fireproofing are in place.
- C. Verify that ducts, piping, equipment, or other items that would interfere with application of fireproofing have not been installed.
- D. Verify that voids and cracks in substrate have been filled. Verify that projections have been removed where fireproofing will be exposed to view as a finish material.

3.2 PREPERATION

- A. Perform tests as recommended by fireproofing manufacturer in situations where adhesion of fireproofing to substrate is in question.
- B. Remove incompatible materials that could affect bond by scraping, brushing, scrubbing, or sandblasting.
- C. Prepare substrates to receive fireproofing in strict accordance with instructions of fireproofing manufacturer.

- D. Apply fireproofing manufacturer's recommended bonding agent on primed steel.
- E. Protect surfaces not scheduled for fireproofing and equipment from damage by overspray, fall-out, and dusting.
- F. Close off and seal duct work in areas where fireproofing is being applied.

3.3 APPLICATION

- A. Apply primer adhesive in accordance with manufacturer's instructions.
- B. Apply fireproofing in thickness and density necessary to achieve required ratings, with uniform density and texture.
- C. Apply fireproofing in sufficient thickness to achieve required ratings, with as many passes as necessary to cover with monolithic blanket of uniform density and texture.

3.4 CLEANING

- A. Remove excess material, overspray, droppings, and debris. All floors shall be left in scraped condition. Concrete floor slabs which are scheduled to remain exposed shall be cleaned of all fireproofing residue and cleaned to the satisfaction of the Architect.
- B. Remove fireproofing from materials and surfaces not required to be fireproofed.

END OF SECTION

SECTION 018100 – FIRESTOPPING

PART 1 - GENERAL

1.1 SECTION INCLUDES

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

1.2 REFERENCES AND DEFINITIONS

- A. ASTM E814 - Standard Test Method for Fire Tests of Through-Penetration Fire Stops.
- B. ITS (DIR) - Directory of Listed Products; Intertek Testing Services NA, Inc..
- C. FM 4991 - Approval of Firestop Contractors; Factory Mutual Research Corporation.
- D. FM P7825 - Approval Guide; Factory Mutual Research Corporation.
- E. SCAQMD 1168 - South Coast Air Quality Management District Rule No.1168;www.aqmd.gov.
- F. UL (FRD) - Fire Resistance Directory; Underwriters Laboratories Inc..

1.3 SUBMITTALS

- A. See Section 01 33 00 - Submittal Procedures, for submittal procedures.
- B. Schedule of Firestopping: List each type of penetration to be used, including manufacturer's data sheet indicating certifier/classifier assembly number and construction components.
- C. Product Data: Provide data on product characteristics.
- D. Certificate from authority having jurisdiction indicating approval of materials used.

1.4 QUALITY ASSURANCE

- A. Fire Testing: Provide firestopping assemblies of designs that provide the scheduled fire ratings.
 - 1. Listing in the current-year classification or certification books of UL, FM, or ITS

- (Warnock Hersey) will be considered as constituting an acceptable test report.
2. Valid evaluation report published by ICC Evaluation Service, Inc. (ICC-ES) at www.icc-es.org will be considered as constituting an acceptable test report.
 3. 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 under FM Standard 4991, Approval of Firestop Contractors, or meeting any two of the following requirements:
 - a. With minimum 3 years documented experience installing work of this type.
 - b. Able to show at least 5 satisfactorily completed projects of comparable size and type.
 - c. Licensed by authority having jurisdiction.
 - d. Approved and trained by firestopping manufacturers used on the Project.
- C. A copy of each Assembly Data sheet shall be kept in a 3-ring binder at the jobsite for reference by all parties.
- D. Installation of firestopping shall be performed by a single company responsible for all firestopping construction.

1.5 FIELD CONDITIONS

- A. Comply with firestopping manufacturer's recommendations for temperature and conditions during and after installation. Maintain minimum temperature before, during, and for 3 days after installation of materials.
- B. Provide ventilation in areas where solvent-cured materials are being installed.

1.6 PRECONSTRUCTION CONFERENCE

- A. A preconstruction conference shall be held prior to the installation of elements affected by the installation of fire stopping materials.
- B. Attendees shall include, but not be limited to:
 1. General Contractor.
 2. Architect/Engineer.
 3. Masonry subcontractor.
 4. Drywall subcontractor.
 5. Fire Stopping installer.
 6. Mechanical contractor.
 7. Plumbing contractor.
 8. Electrical contractor.

PART 2 - PRODUCTS

2.1 FIRESTOPPING- GENERAL REQUIRMENTS

- A. Firestopping Materials with Volatile Content: Provide only products having lower volatile organic compound (VOC) content than required by South Coast Air Quality Management District Rule No.1168.
- B. Primers, Sleeves, Forms, Insulation, Packing, Stuffing, and Accessories: Type required for tested assembly design.

2.2 MATERIALS

- A. Elastomeric Silicone Firestopping: Single component silicone elastomeric compound and compatible silicone sealant; conforming to the following:
 - 1. Elongation: 600 percent.
 - 2. Adhesion and Bond To Substrate: 25 psi.
 - 3. Density: 1.37 grams/ml.
 - 4. Durability and Longevity: Permanent.
 - 5. Color: Black, dark gray, or red.
 - 6. Manufacturers:
 - a. 3M Fire Protection Products; Product Fire Barrier 2000: www.3m.com/firestop.
 - b. Hilti, Inc; Product CP 601/CP 606: www.us.hilti.com.
 - c. International Protective Coatings Corp.; Product FS 1900: www.international-pc.com.
 - d. Tremco; Product Fyre-Sil/Fyre-Sil SL: www.tremcosealants.com
 - e. Substitutions: See Section 01 60 00 - Product Requirements.
- B. Foam Firestoppping: Multiple component silicone foam compound; conforming to the following:
 - 1. Density: 18 to 25 lb/cu ft.
 - 2. Durability and Longevity: Permanent.
 - 3. Manufacturers:
 - a. 3M Fire Protection Products; Product Fire Stop Foam 2001: www.3m.com/firestop.
 - b. Hilti, Inc; Product CP 620 Fire Foam: www.us.hilti.com.
 - c. Specified Technologies, Inc.; Product Pensil 200 Foam.
 - d. Substitutions: See Section 01 60 00 - Product Requirements.
- C. Fibered Compound Firestopping: Formulated compound mixed with incombustible non-asbestos fibers; conforming to the following:
 - 1. Density: 6-8 lb/cu ft.
 - 2. Durability and Longevity: Permanent.
 - 3. Color: Black.
 - 4. Manufacturers:

- a. A/D Fire Protection Systems Inc.
 - b. Hilti, Inc.; Product CP 637 Firestop Compound www.us.hilti.com.
 - c. USG Corporation.; Product Thermafiber "Firespan", "FSP" or "Dark Firespan" with
 - d. required fire rating.
 - e. Tremco; Product Cerablanket F.S.: www.tremcosealants.com.
 - f. Substitutions: See Section 01 60 00 - Product Requirements.
- D. Fiber Firestopping: Mineral fiber insulation used in conjunction with elastomeric surface sealer forming airtight bond to opening; conforming to the following:
1. Durability and Longevity: Permanent.
 2. Manufacturers:
 - a. A/D Fire Protection Systems Inc.
 - b. Hilti, Inc.; Product CP 677 Speed Plugs: www.us.hilti.com
 - c. Pecora Corp.
 - d. USG Corporation.
 - e. Substitutions: See Section 01 60 00 - Product Requirements.
- E. Firestop Devices: Mechanical device with incombustible filler and collar.
1. Durability and Longevity: Permanent; suitable for pedestrian traffic.
 2. Manufacturers:
 - a. Hilti, Inc.; Product CP642/CP643 Firestop Collar: www.us.hilti.com.
 - b. International Protective Coatings Corp www.international-pc.com.
 - c. 3M Fire Protection Products: www.3m.com/firestop.
 - d. Specified Technologies, Inc.
 - e. Tremco; Product Tremstop WS, MCR (Master Collar Roll), Tremstop D, Tremstop
 - f. Fyre-Can, Tremstop Fyre Can Sleeve: www.tremcosealants.com.
 - g. Substitutions: See Section 01 60 00 - Product Requirements.
- F. Intumescent Putty: Compound that expands on exposure to surface heat gain; conforming to the following:
1. Potential Expansion: Minimum 1000 percent.
 2. Durability and Longevity: Permanent.
 3. Color: Black, dark gray, or red.
 4. Manufacturers:
 - a. 3M Fire Protection Products; Product Fire Barrier Moldable Putty: www.3m.com/firestop.
 - b. Hilti, Inc; Product CP618 Putty Stick/CP617 Putty Pad: www.us.hilti.com.
 - c. International Protective Coatings Corp. Product Flame-Safe FSP1000 Putty: www.international-pc.com.
 - d. Tremco; Product Tremstop MP: www.tremcosealants.com.
 - e. Substitutions: See Section 01 60 00 - Product Requirements.
- G. Firestop Pillows or Blocks: Removable and reusable intumescent pillows or blocks. Pillows shall consist of a glass-fiber cloth case filled with mineral fibers. Blocks shall be made of sponge-like polyurethane material.

1. Density: 24.9 lb/cu ft plus/minus 6.33 pounds.
 2. Durability and Longevity: Permanent.
 3. Manufacturers:
 - a. Hilti, Inc; Product FS 657/CP 658 Fire Block/Plug: www.us.hilti.com.
 - b. Nelson Firestop Products.
 - c. Specified Technologies, Inc.
 - d. Tremco; Product Tremstop P.S. (Pillow System): www.tremcosealants.com.
 - e. Substitutions: See Section 01 60 00 - Product Requirements.
- H. Intumescent Firestop Sealant: Single component acrylic sealant conforming to the following:
1. Density: 1.5 grams/ml.
 2. Durability & Longevity: Permanent.
 3. Color: Red.
 4. Manufacturers:
 - a. Hilti, Inc.; Product CP 604 Self-Leveling Intumescent Firestop Sealant or FS-ONE intumescent firestop acrylic sealant: www.us.hilti.com.
 - b. 3M Fire Protection Products; Product Fire Barrier CP25 WB: www.3m.com.
 - c. Tremco; Product Tremstop WBM Intumescent Firestop Sealant www.tremcosealants.com.
 - d. www.tremcosealants.com.
 - e. Substitutions: See Section 01 60 00 - Product Requirements.
- I. Firestop Joint Spray: Single component elastomeric spray-on firestop sealant conforming to the following:
1. Density: 9lb/gal.
 2. Durability and Longevity: Permanent.
 3. Color: Red.
 4. Manufacturers:
 - a. Hilti, Inc.; Product CP 672 Speed Spray; www.us.hilti.com.
 - b. 3M Fire Protection Products; Product Fire Dam Spray: www.3m.com.
 - c. Nelson FireStop Products; Product FSC Coating: www.nelsonfirestop.com.
 - d. Substitutions: See Section 01 60 00 - Product Requirements.
- J. Primers, Sleeves, Forms, Insulation, Packing, Stuffing, and Accessories: Type required for tested assembly design.

PART 3 - EXECUTION

3.1 EXAMINATION

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

3.2 PREPERATION

- A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other matter that could adversely affect bond of firestopping material.

B. Remove incompatible materials that could adversely affect bond.

C. Install backing materials to arrest liquid material leakage.

3.3 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 authority having jurisdiction.

C. Install labeling at each penetration indicating certifier/classifier assembly number.

3.4 PROTECTION

A. Protect adjacent surfaces from damage by material installation.

END OF SECTION