

Section 07 81 60

Interior Intumescent Fireproofing

Part 1 - GENERAL

1.1 WORK INCLUDED

- A. Preparing surfaces to receive fireproofing.
- B. Protection of adjacent surfaces from over spraying.
- C. Spray application of water based, intumescent, fireproofing on interior, exposed structural steel wide flange columns, beams, pipe columns, and a related exposed structural steel to provide rated fireproofing.

1.2 RELATED WORK

- A. Section 05120 - Structural Steel.

1.3 REFERENCES

- A. ASTM D 256 - Impact Resistance test.
- B. ASTM D 638 8- Tensile Strength.
- C. ASTM D 695 - Standard Test Method for Compressive Strength.
- D. ASTM D 790 - Standard Test Method for Flexural Strength.
- E. ASTM D 1002 - Standard Test Method for Bond Strength.
- F. ASTM D 1044 - Standard Test Method for Abrasion Resistance Test.
- G. ASTM D 4541 - Bond Strength.
- H. ASTM E 84 - Test Method for Surface Burning Characteristics of Building Materials.
- I. ASTM E 119 - Fire Tests of Building Construction and Materials.
- J. U.L., Inc. - Fire Resistance Directory.
- K. SSPC-SP-1 Solvent Cleaning - Steel Structures Painting Council (SSPC).
- L. SSPC-SP-2 Hand Tool Cleaning - Steel Structures Painting Council (SSPC).
- M. SSPC-SP-3 Power Tool Cleaning - Steel Structures Painting Council (SSPC).
- N. SSPC-SP-6 commercial Blast Cleaning - Steel Structures Painting Council (SSPC).

1.4 PERFORMANCE REQUIREMENTS

- A. Intumescent fireproofing system to provide a fire rating of one, one and one half, two, two and one half, three, three and one half hours.

1.5 SUBMITTALS

- A. Submit product data under provisions of Section 01300.
 - 1. Indicate product characteristics, performance, and limitation criteria.
- B. Submit manufacturer's installation instructions under provisions of Section 01300.
- C. Submit manufacturer's certificate under provisions of Section 01400 that products meet or exceed specified requirements.
- D. Submit test reports under provisions of Section 01400.
- E. Submit certified test reports indicating the following:
 - 1. Fire test reports of fireproofing application to substrate materials similar to project conditions.
 - 2. U.L. Design Listings from U.L., Inc.
- F. Submit applicator's current certification, by product manufacturer, as a factory trained and manufacturer approved installer of this product.

1.6 QUALITY ASSURANCE

- A. Manufacturer: Company specializing in manufacturing the products specified in this Section with minimum five years documented experience.
- B. Applicator: Company specializing in applying the work of this Section with minimum three years documented experience and approved by manufacturer.

1.7 REGULATORY REQUIREMENTS

- A. Conform to applicable code for fire resistance ratings.
- B. Submit certification of acceptability of fireproofing materials to authority having jurisdiction and to Architect.

1.8 MOCKUP

- A. Provide mockup of applied intumescent fireproofing under provisions of Section 01400.
- B. Provide testing and analysis of mockup to manufacturer's published data.
- C. Apply sample section of 100 sq ft in size to representative substrate on site.
- D. Comply with project requirements as to thickness, density, fire rating, and finish texture.
- E. Examine installation to determine variances.
- F. If accepted, mockup will demonstrate minimum standard for the Work. Mockup may remain as part of the Work.

1.9 ENVIRONMENTAL REQUIREMENTS

- A. When temperature is less than 40F, follow manufacturer's field instructions for cold weather installation. So not apply when surface temperature is less than 5 degrees F above the dew point.
- B. Provide ventilation in areas to receive fireproofing during and 72 hours, minimum, after application, to dry materials and dissipate solvent odors.
- C. Maintain non-toxic, unpolluted working area. Provide temporary enclosure to prevent spray from contaminating air.

1.10 SEQUENCING AND SCHEDULING

- A. Sequence work under provisions of Section [____.]
- B. Sequence work in conjunction with placement of ceiling hanger tabs, mechanical component hangers, and electrical components.

1.11 WARRANTY

- A. Provide one year manufacturer's warranty under provisions of Section 01700.
- B. Provide one year applicator's warranty under provisions of Section 01700.
- C. Warranty: Fireproofing to remain free from cracking, checking, dusting, flaking, spalling, separation, and blistering. Reinstall or repair such defects or failures.

Part 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Albi Manufacturing, East Berlin, CT (860) 828-0571; "ALBI CLAD TF."

2.2 MATERIALS

- A. Intumescent Fireproofing: Single component, water based, factory mixed, asbestos free, intumescent material blended for uniform texture; conforming to the following requirements:
 - 1. Bond Strength: ANSI/ASTM E 736, [---] lb/sq ft when set and dry.
 - 2. Dry Density: ASTM E 760, no cracking, flaking, or delamination.
 - 3. Dry Density: ASTM E 605, minimum average density of [---] lb/cu ft, with minimum individual density of [---] lb/cu ft.
 - 4. Surface burning characteristics, ASTM E84:
 - a) Flame Spread: 2.
 - b) Smoke Developed: 5.
 - 5. Compressive strength: Minimum [---] lb/sq ft.
- B. Primer: Albi 487S, 490@, or type recommended or approved by fireproofing manufacturer.

Part 3 - EXECUTION

3.1 INSPECTION

- A. Verify that surfaces are ready to receive work.
- B. Verify that clips, hangers, supports, sleeves, and other items required to penetrate fireproofing are in place.
- C. Verify ducts, piping, equipment, or other items that would interfere with application of fireproofing are not positioned until fireproofing work is complete.
- D. Verify that voids and cracks in substrate are filled, and projections are removed where fireproofing is exposed to view as a finish material.
- E. Beginning of installation means applicator accepts existing substrate.

3.2 PREPARATION

- A. Work in accordance with SSPC guidelines SSPC-SP-1, SSPC-SP-2, SSPC-SP-3, or SSPC-SP-6 as appropriate to prepare substrate.
- B. Clean substrate of dirt, dust, grease, oil, loose material, or other matter which may affect bond of fireproofing.
- C. Seal all penetrations or open ended fireproofing termination by chamfering at a 45 degree angle and sealing with high heat silicone sealant.
- D. Install reinforcement over structural members as indicated on Drawings, or U.L. Fire Resistance Directory Listings.

3.3 PROTECTION

- A. Protect floor areas from this Work by completely covering with tarps or 4 mil polyethylene sheets.
- B. Protect adjacent surfaces and equipment from damage by overspray, fall-out, and dusting.
- C. Close off and seal ductwork in areas where fireproofing is being applied.

3.4 APPLICATION

- A. Apply primer and fireproofing in accordance with manufacturer's instructions. Do not apply to surfaces that would prohibit proper adhesions.
- B. Apply primer according to primer manufacturer's recommendations. Provide primer "cut-back" three inches for bolted connections and 12 inches for welded connections.

- C. Apply fireproofing in sufficient thickness to achieve rating, with as many passes necessary to cover with monolithic blanket of uniform hardness, density and texture. Spray and roll smooth the finished surface.

3.5 FIELD QUALITY CONTROL

- A. Field inspection and testing will be performed using manufacturer's guidelines under provisions of Section 01400.
- B. Inspections will be performed to verify compliance with requirements.
- C. Patch fireproofing, which has been cut away to facilitate work of other trades, so as to maintain complete coverage of full thickness on appropriate substrate.
- D. Correct unacceptable Work and provide further inspection to verify compliance with requirements, at no cost.

3.6 CLEANING

- A. Clean work under provisions of Section 01700.
- B. Remove excess material, overspray, droppings, and debris.
- C. Remove fireproofing from materials and surfaces not specifically required to be fireproofed.

Part 4 - SCHEDULE

4.1 SCHEDULE OF FIREPROOFING

- A. Steel Framing of Elevator Shaft way.
 - 1. Components: Columns, beams and attachments.
 - 2. U.L. Rating: 1.