

SECTION 07 81 23

INTERIOR INTUMESCENT FIREPROOFING

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: Provision of interior intumescent fireproofing as indicated by Drawings and by provisions of this section.
- B. Related Sections:
 - 1. Provision of finish painting system.

1.02 REFERENCE STANDARDS

- A. ASTM International:
 - 1. ASTM D256 - Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics.
 - 2. ASTM D695 - Standard Test Method for Compressive Properties of Rigid Plastics.
 - 3. ASTM D952 - Standard Test Method for Bond or Cohesive Strength of Sheet Plastics and Electrical Insulating Materials.
 - 4. ASTM D1044 - Standard Test Method for Resistance of Transparent Plastics to Surface Abrasion.
 - 5. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
 - 6. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
- B. California Department of Health Services:
 - 1. CA/DHS/EHLB/R-174 - Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers, including 2004 Addenda.
- C. CBC - California Building Code.
- D. Underwriters Laboratories Inc.:
 - 1. UL - Fire Resistive Directory.

1.03 SYSTEM DESCRIPTION

- A. Fire-Endurance Ratings: Provide products which have been tested in accordance with ASTM E119 for fire-resistance and rated by UL or other industry-recognized agency for the required resistances.
- B. Fire-Spread Ratings: Provide products which have been tested and listed by UL for required surface burning characteristics (flame-spread, smoke developed) in accordance with ASTM E84.
 - 1. General Ratings: Provide completed installations including coatings (if any), rated at a maximum flame-spread of 25, smoke developed 50 or less.
- C. Rating Schedule: Comply with requirements indicated in "Fire Proofing Schedule" included on the Drawings.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
1. Coordinate installation of interior intumescent fireproofing with other work so as to minimize the need for other trades to cut into or remove installed interior intumescent fireproofing.
- B. Preinstallation Meeting:
1. Contractor shall arrange meeting to review interior intumescent fireproofing work prior to actual installation.
 2. Meeting to be attended by University's Representative, University's Inspector of Record, Contractor, and Contractor's installer, agents of accepted manufacturers, and other installers whose work may be affected quality of interior intumescent fireproofing. Contractor to provide at least one week's advance notice of meeting date and time.
 3. Participants shall have had at least one week's advance notice of meeting date and time.
 4. Hold meeting at the job site.
 5. The following major considerations shall be reviewed at the meeting:
 - a. Review in detail the Contract specifications, surface preparation, protection of adjacent surfaces, installation procedures, field quality control, and other related items.
 - b. Review in detail job conditions, schedule, construction sequence, application requirements, and quality of completed installation.
 - c. Review methods for storing and handling materials.
 - d. Review in detail the means of protecting completed work during remainder of construction period.
 - e. Record discussions of meeting and any conflict, incompatibility, or inadequacy, and furnish a copy of record to each participant.
 6. Contractor shall produce meeting notes that will record discussions of meeting and any conflict, incompatibility, or inadequacy and they will indicate that the applicator of w spray applied fireproofing has reviewed and accepted the substrates for interior intumescent fireproofing. Distribute meeting notes to all attendees prior to installation of interior intumescent fireproofing.
- C. Sequencing:
1. Prior to application of interior intumescent fireproofing, all other trades must have completed installation of all items such as hangers, clamps, and other attachments for work suspended from, attached to, or passing through construction required to receive interior intumescent fireproofing. Install the items such that they do not interfere with interior intumescent fireproofing applicator's ability to access the work or contribute to unsafe working conditions for applications.
 2. Apply interior intumescent fireproofing prior to installation of ducts, piping conduit, and other work preventing correct application.
- D. [Scheduling:]

1.05 [SUSTAINABLE CHARACTERISTICS]

- A. Section 01 35 63 - Sustainability Project Requirements: Requirements for sustainable design compliance.
- B. Materials and Resources Characteristics:
1. [Recycled Content Materials: Furnish materials with maximum available recycled content including:
SPEC NOTE *List materials specified in this section required to have recycled content.*
 - a. [_____].
 2. [Regional Materials: Furnish materials extracted, processed, and manufactured within 500 miles of Project site.]
SPEC NOTE *List materials specified in this section required to be regional materials.*

a. [_____.]

- C. Indoor Environmental Quality Characteristics:
1. Paints and Coatings: Maximum volatile organic compound content in accordance with product and testing requirements of CA/DHS/EHLB/R-174.

1.06 SUBMITTALS

- A. Product Data: Submit manufacturer's product specifications and installation instructions for each type of material and application method required.
1. Certified Tests: With product data submit certified test reports on performances including (as applicable) burning characteristics, densities, compressive strength, bond strengths, hardness, corrosion resistance, deflection, effect of impact on bonding, and air erosion.
- B. Test Data: Reports of independent testing agencies, of product proposed for use, which indicates conformance with specified surface burning characteristics, physical properties and fire-resistive ratings
- C. Certifications: Submit the following certifications indicating that:
1. Applicator meets qualifications specified in this Section.
 2. Applied fireproofing products meet or exceed requirements of Contract Documents.
 3. Excluding structural fire resistance ratings, that material and installation meets the local building department requirements of the jurisdiction in which the building is located.
 4. If primer is used on steel, submit certifications by supplier of primer that primer is compatible with material, and will not impair the required performance of the installed intumescent fireproofing. Such certification shall be accompanied by evidence that the primer was successfully used in conjunction with the fireproofing material in an ASTM E119 test applicable to the construction.
- D. Sample: Submit sample panel approximately 18 inches by 18 inches for University's Representative's review.
- E. Test Reports: Submit laboratory test reports on each required test of in-place fireproofing, including location and date of samples as tested, and laboratory's conclusions.

1.07 [SUSTAINABLE DESIGN SUBMITTALS]

- A. Section 01 35 63 - Sustainability Project Requirements: Requirements for sustainable design submittals.
- B. Manufacturer's Certificate: Certify products meet or exceed specified sustainable design requirements.
1. Materials Resources Certificates:
 - a. Certify recycled material content for recycled content products.
 - b. Certify source for regional materials and distance from Project site.
 2. Indoor Air Quality Certificates:
 - a. Certify volatile organic compound content for each interior paint and coating.
- C. Product Cost Data: Submit cost of products to verify compliance with Project sustainable design requirements. Exclude cost of labor and equipment to install products.
1. Provide cost data for the following products:
 - a. Products with recycled material content.
 - b. Regional products.

1.08 QUALITY ASSURANCE

- A. Installer of Interior Intumescent Fireproofing: A specialist licensed or otherwise recommended by manufacturer of interior intumescent fireproofing materials, including qualified factory training where recommended by manufacturer.

1.09 DELIVERY, STORAGE AND HANDLING

- A. Deliver material to the job site in sealed packages properly marked and labeled to show manufacturer's name, brand, and certification of compliance with requirements for fire hazard and fire endurance classifications. Store materials off the ground, under cover, and away from damp surfaces. Damaged packages found unsuitable for use in the work will be rejected and shall be removed from the site.

1.10 SITE CONDITIONS

- A. Environmental Requirements:
 - 1. When temperature is less than 40 degrees Fahrenheit, follow manufacturer's field instruction for cold weather installation. Do not apply when surface temperature is less than 5 degrees Fahrenheit above dew point.
 - 2. Provide ventilation in areas to receive intumescent fireproofing during and 72 hours, minimum, after application, to dry materials and dissipate solvent odors.
 - 3. Maintain non-toxic, unpolluted working area. Provide temporary enclosures to prevent spray from contaminating air.

1.11 WARRANTY

- A. Special Project Warranty: Submit written warranty, executed by Contractor and cosigned by Installer, agreeing to repair/replace intumescent fireproofing work of this section, which has cracked, flaked, dusted excessively, peeled or fallen from substrate, or otherwise deteriorated to a condition where it would not perform effectively as intended for intumescent fireproofing purposes; due substantially to defective materials or workmanship and not due to abuse by occupants, improper maintenance, nonforeseeable ambient exposures, or other causes beyond anticipated conditions and Contractor's control. Warranty period is two years after date of substantial completion.

PART 2 PRODUCTS

2.01 MATERIAL

- A. Interior Intumescent Fireproofing:
 - 1. Description: Single component, water based, factory mixed, asbestos free, intumescent material blended for uniform texture; conforming to following requirements:
 - a. Bond Strength: 40 psi, ASTM D952.
 - b. Dry Applied Density: 85 pounds per cubic foot.
 - c. Fire Hazard Classification: ASTM E84, flame spread 2; smoke developed 5.
 - d. Compressive Strength: 300 psi, ASTM D695.
 - e. Impact Resistance: 0.77 foot-pounds per in of notch, ASTM D256.
 - f. Abrasion Resistance: Zero gm loss per 1000 cycles, ASTM D1044.
 - 2. Product: Albi Manufacturing, Division of StanChem, Inc.'s "Albi Clad TF"; or equal.
- B. Primer and Other Attachment Devices: Type recommended by intumescent fireproofing manufacturer and complying with selection requirements of applicable fire-endurance tests.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine substrates and conditions under which intumescent fireproofing work is to be performed and must notify University's representative in writing of unsatisfactory conditions. Do not proceed with intumescent fireproofing work until unsatisfactory conditions have been corrected in a manner acceptable to the Installer.

3.02 PREPARATION

- A. Clean substrates of substances which might be incompatible with or interfere with bond or intumescent fireproofing, including oil, dirt, loose mill scale, rust and noncompatible shop primer. Remove ill-timed work which might interfere with installation of intumescent fireproofing.
- B. Cover other work which might be damaged by fall-out or overspray of interior intumescent fireproofing materials during spraying operations. Provide temporary enclosure as may be required to confine operations, protect the environment, and ensure ambient conditions and substrate temperature and other conditions as recommended by the manufacturer of the sprayed-on material.

3.03 APPLICATION

- A. Apply primer and interior intumescent fireproofing in accordance with manufacturer's instructions for particular conditions of installation in each case, and as required to comply with fire endurance ratings. Consult with manufacturer's technical representative for conditions not covered by printed instructions.
- B. Apply primer recommended by interior intumescent fireproofing manufacturer to all steel surfaces receiving intumescent fireproofing.
- C. Where existing steel is already primed coated, check for compatibility prior to interior intumescent fireproofing. If it is determined that the existing paint surface is sensitive to intumescent fireproofing solvent, remove existing prime coat by sand blasting and reprime in accordance with interior intumescent fireproofing manufacturer's specifications.
- D. Apply interior intumescent fireproofing in sufficient thickness as required for compliance with indicated fire-endurance ratings, with as many passes necessary to cover with monolithic blanket of uniform hardness, density, and texture.
- E. Following spraying operation in each area, complete the coverage by light rolling to achieve a smooth texture.
- F. Maintain ambient conditions during installation and for cure period following installation, as recommended by manufacturer. Provide ventilation and avoid excessive rate of drying.

3.04 FIELD QUALITY CONTROL

- A. Engage an independent test agency to sample and test completed interior intumescent fireproofing using manufacturer's guidelines. Patch voids where test samples are removed.
- B. Repair or replace interior intumescent fireproofing found (by field tests) to be below compliance requirements.

3.05 DEFECTIVE WORK

- A. Repair spalling attributable to vibration of structure after application or resulting from unsatisfactory cleaning of surfaces.
- B. Remove interior intumescent fireproofing in areas deemed defective and replace with new meeting requirements of this Section.
- C. Restore to original condition work of other sections damaged in repair or replacement of defective work.

3.06 CLEANING

- A. Immediately upon completion of spraying operations in each containable area of project, remove over-spray and fall-out of materials from surfaces of the work, and clean surfaces to remove evidence of soiling. Repair or replace damaged work to restore surfaces to acceptable condition.

3.07 PATCHING

- A. As other trades successively complete installations of other work, patch intumescent fireproofing installation which have been cut away to facilitate such installation, so as to maintain complete coverages of full thickness on substrates to be protected with intumescent fireproofing. Trowel-applied fireproofing materials are acceptable for patching of work. Do not allow work requiring patching to be covered over or otherwise concealed before patching is completed.

3.08 PROTECTION

- A. Protect installed intumescent fireproofing work to ensure that intumescent fireproofing will be substantially without damage or deterioration at time of substantial completion of project. Provide protection from reasonably predictable harmful exposures. Repair or replace work which has not been successfully protected.

3.09 FINAL INSPECTION

- A. Final inspection of sprayed areas will be conducted after mechanical, electrical, and other trades have completed work in contact with sprayed material but before it is covered. Repair damaged areas at no cost to University.

PART 4 END OF SECTION