SECTION 09 9646

INTUMESCENT PAINTING

PART 1 GENERAL

1.1 SUMMARY

A. Work includes but is not limited to following:

1. Intumescent paint applied to interior items and surfaces.
2. Intumescent paint applied to exterior items and surfaces.
3. Preparation of surfaces.

B. Related Documents and Sections: Examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Other Documents and Sections that directly relate to work of this Section include, but are not limited to:

1. General provisions of the Contract, including General and Supplementary Conditions, and Division 01 General Requirements Specification Sections.
2. Section 05 1200 - STRUCTURAL STEEL.
3. Section 05 5000 - METAL FABRICATIONS.
4. Section 09 9100 - PAINTING.

1.2 SYSTEM DESCRIPTION

A. General System Description: Intumescent fire-protective films providing required fire resistive ratings without inhibiting the aesthetic appearance of items and surfaces.

1. Visual Appearance Requirement: Intumescent paint finishes applied to surfaces visible to building occupants shall exhibit no blemishes, sags, or runs under normal lighting conditions when viewed at normal viewing angles at a distance not less than 36 inches.
    a. Painted surfaces rejected by the Architect shall be made good at the expense of the Contractor. Small affected areas may be touched up; large affected areas shall be repainted. Runs, sags of damaged paint shall be removed by scraper or by sanding prior to application of paint.

B. Gloss Levels: Specular gloss levels specified shall be measured in accordance with ASTM D 523.

C. Scratch Resistance: Paints used shall comply with the minimum requirements of ASTM D5178.

D. Finishes

1. Basic Finish: The coating system achieves the required fire performance and corrosion protection performance, but is not required to achieve any requirement for standard of finish.
2. Decorative Finish: In addition to the requirement for basic finish above, a good standard of cosmetic finish is generally required when viewed from a distance of 16 feet. Minor orange peel and other texture resulting from application or localized repair is acceptable.
3. Custom Finish: In addition to the requirement for decorative finish above, the coating finish is required to have a standard of evenness, smoothness and gloss agreed between the Architect and the Contractor. When agreeing a custom standard of finish, the Architect and the Contractor shall take account of the effects of steel size, section shape, design complexity and the required period of fire resistance.

E. Performance Criteria:

1. Intumescent fireproofing system to provide fire rating(s) indicated.

1.3 SUBMITTALS

A. Action Submittals:

1. Product Data: Submit manufacturer's printed descriptions of materials and systems, performance criteria, use limitations, recommendations and installation information.
2. System Drawings: Submit UL system drawings for each type and condition of structural steel to be protected. The intumescent fire protection materials shall be applied at the required thickness to provide the UL fire resistive ratings.
3. Samples:
   a. Initial for Selection: Submit printed color charts or sample chains indicating manufacturer’s complete range to determine color, texture, shape, and/or composition for each type of material finish exposed to view.
   b. For Verification: For each type of coating system and each color and gloss of intumescent paint finish indicated.
      1). Submit Samples on rigid backing, not less than 12 inches square.
      2). Step coats on Samples to show each coat required for system.
      3). Label each coat of each Sample.
      4). Label each Sample for location and application area.

B. Informational Submittals:

1. Quality Assurance Submittals:
   a. Material Test Reports: For each intumescent paint used in the Project.
   b. Qualification Statements
      1). Applicator’s current certification, by product manufacturer

1.4 QUALITY ASSURANCE

A. Qualifications:

1. Manufacturer Qualifications: A firm experienced a minimum five (5) years in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance.
2. Applicator Qualifications: Engage an experienced applicator who is certified, licensed, or otherwise qualified by the intumescent paint manufacturer as having the necessary experience, staff, and training to install manufacturer's products per specified requirements.
   a. A manufacturer's willingness to sell its intumescent paint products to the Contractor or to an Installer engaged by the Contractor does not in itself confer qualification on the buyer.

B. Regulatory Requirements:

1. Conform to applicable code for fire resistance ratings.
2. Submit certification of acceptability of fireproofing materials to Architect; UL Evaluation Service Report or ICC-E5 Report are acceptable.

C. Compatibility: Comply with preconstruction compatibility testing requirements in Section 07 2013.

D. MPI Standards: Comply with indicated requirements for the following:

1. Products: MPI standards indicated and listed in "MPI Approved Products List."
2. Preparation and Workmanship: "MPI Architectural Painting Specification Manual" for

products and paint systems indicated.

E. Mockups: Apply mockups to demonstrate aesthetic effects and set quality standards for materials and execution. Notify Architect of mockup installation; do not proceed with the work until the Architect has approved the mockup.

1. Extent of Mockups: Approximately 10 sq. ft. of surface for each product indicated.
2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

F. Source Limitations: Obtain intumescent paint products for each fire protection system and construction condition indicated from a single manufacturer.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Shipping, Delivery and Handling: Adequately protect products from soiling, damage, deterioration, and loss, including theft, handling with proper care in proportion to the fragility and hazard of each product and its finished surface.

1. Manufacturers, fabricators, suppliers and shippers shall provide least amount of packaging that adequately and properly protects, supports and contains the items shipped, and is reusable, returnable or recyclable.
2. Deliver materials to Project site in an undamaged condition, in original, unopened and undamaged packages or containers or bundles bearing manufacturer's intact label, names, brand names, types and thicknesses of contents, and proper handling, storing, unpacking, protecting, and installation instructions, as warranted.
3. In addition to the above requirements, follow manufacturer’s recommendation for shipping, delivery and handling.

B. Acceptance at Site: Inspect shipped materials on delivery to ensure compliance with requirements, reject damaged goods and accept properly ordered, protected and undamaged goods.

1. Mark products with Shop Drawing location reference, unless already properly marked.

C. Storage and Protection: Protect materials during shipping, handling, storage and installation from exposure to harmful conditions including, but not limited to, direct sunlight, weather, vandalism, extreme changes in temperature, dryness or humidity, denting, chipping, gouging, warping, peeling, moisture, construction operations, and other damage, all in accordance with manufacturer’s recommendations.

1.6 WARRANTY

A. Contractor shall warrant installation for a period of two (2) years.

B. Warranty: Furnish two (2) year written warranty signed by the manufacturer and installer agreeing to repair or replace work which has failed as a result of defects in materials or workmanship. Upon notification within the warranty period, such defects shall be repaired at no cost to the Owner.

1. Warrant intumescent paint to remain free from cracking, checking, dusting, flaking, spalling, separation, and blistering.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with requirements, provide products by one of the following:

1. Basis-of-Design: Isolatek International.
2. Architect acceptable equivalent.

2.2 INTUMESCENT PAINT MATERIALS, GENERAL

A. Material Compatibility:

1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each material or coat, provide products and spreading rates recommended in writing by intumescent paint manufacturer for use on substrate indicated. Comply with requirements for fire-retardant coating classification and surface-burning characteristics indicated.

2.3 MATERIALS

A. Basis-of-Design (Base Bid): Isolatek CAFCO Sprayfilm WB4 System (Exterior):

1. Components:
   a. Primer shall be approved by manufacturer and applied in full accordance with the primer manufacturer's written instructions.
   b. Intumescent fire resistive material shall be applied in accordance with drawings and/or specifications, and shall have been tested in accordance with the procedures of ANSI/UL 263 or ASTM E119 or CAN/ULC-S101, and reported by Underwriters Laboratories, Inc. or Underwriters Laboratories of Canada only.
   c. Thin-Film Fire-Resistive Intumescent Mastic Coating: Factory-mixed formulation.
      1). Water-Based Formulation: Approved by manufacturer and authorities having jurisdiction for indicated use.
      2). Verify with manufacturer that products selected are suitable for use indicated.
      3). UL Fire Tested Designs Only based on ANSI/UL 263 (ASTM E119).
      4). Minimum Shore D Hardness of 81 before the topcoat and finish coats are applied.
      5). Meet UL Interior General Purpose Classification Requirements without any topcoat.
      6). To assure an acceptable Architectural finish, no mesh is allowed.
   d. Topcoat materials shall be as required for color-coding, aesthetics or additional surface protection, and approved by the thin-film fire resistive material manufacturer.
      1). For exterior applications with CAFCO SprayFilm WB 4, CAFCO SprayFilm Topseal™ must be applied over the CAFCO SprayFilm WB 4 per the specified UL design listings.
      2). For exterior applications, exterior finish coat materials are required over SprayFilm Topseal for color-coding, aesthetics, and additional surface protection and shall be approved by the thin-film fire resistive manufacturer.
2. Colors and Gloss: As selected by Architect from manufacturer's full range.

B. Basis-of-Design (Base Bid): Isolatek CAFCO Sprayfilm WB5 System (Interior):

1. Components:
   a. Primer shall be approved by manufacturer and applied in full accordance with the primer manufacturer's written instructions.

b. Intumescent fire resistive material shall be applied in accordance with Drawings and/or specifications, and shall have been tested in accordance with the procedures of ANSI/UL 263 or ASTM E119 or CAN/ULC-S101, and reported by Underwriters Laboratories, Inc. or Underwriters Laboratories of Canada only.
c. Thin-Film Fire-Resistive Intumescent Mastic Coating: Factory-mixed formulation.
   1). Water-Based Formulation: Approved by manufacturer and authorities having jurisdiction for indicated use.
   2). Verify with manufacturer that products selected are suitable for use indicated.
   3). UL Fire Tested Designs Only based on ANSI/UL 263 (ASTM E119).
   4). Minimum Shore D Hardness of 69 before the topcoat and finish coats are applied.
   5). Current Third Party Evaluation Service Report
   6). To assure an acceptable Architectural finish, no mesh is allowed.
d. Topcoat materials shall be as required for color-coding, aesthetics or additional surface protection, approved by the thin-film fire resistive material manufacturer and applied in full accordance with the coating manufacturer's written instructions.

2. Colors and Gloss: As selected by Architect from manufacturer's full range.

PART 3 EXECUTION

3.1 PREPARATION

A. All surfaces to receive thin-film fire resistive material shall be clean, dry and free of oil, grease, loose mill scale, dirt, dust or other materials which would impair bond of the thin-film fire resistive material to the surface. Any cleaning of the surfaces to receive fire resistive material shall be the responsibility of the General Contractor or steel erector, as outlined in the structural steel section.

B. Confirm compatibility of surfaces to receive thin-film fire resistive material. Steel surfaces shall be primed with a compatible primer approved by the thin-film fire resistive material manufacturer.

C. Provide masking, drop cloths or other suitable coverings to prevent overspray onto surfaces not intended to be coated with intumescent coating.

3.2 APPLICATION

A. The thin-film fire resistive material shall be applied at the required dry film thickness per the appropriate UL design number guidelines and manufacturers written application instructions.

3.3 CLEAN UP AND REPAIR

A. Upon completion of installation, all excess material, overspray and debris shall be cleared and removed from the job site.

B. All patching of and repair to thin-film fire resistive material, due to damage by other trades, shall be performed under this section and paid for by the trade responsible for the damage. Patching shall be performed by an applicator with expertise in the installation of fire resistive or similar materials. Repair shall be in accordance with UL design number guidelines and manufacturers written application instructions.

3.4 INSPECTION AND TESTING

A. In addition to continuous Wet Film Thickness checks performed by applicator during application, the installed intumescent material shall be inspected by a qualified independent testing laboratory for thickness in accordance with the AWCI Technical Manual 12-B "Standard Practice For The Testing and Inspection Of Field Applied Thin-Film Intumescent Fire-Resistive Materials; an Annotated Guide", Latest Edition, before application of the topcoat.

B. The results of the above tests shall be made available to all parties at the completion of each area and approved prior to the application of topcoat.

3.5 CLEANING AND PROTECTION

A. Protect the work of other trades and work of this Section already installed against soiling and damage by the exercise of reasonable care and precautions. Repair or replace any work so damaged or soiled.

B. At completion of construction activities of other trades, touch up and restore damaged or defaced coated surfaces.

END OF SECTION