SECTION 07 81 23

INTUMESCENT MASTIC FIREPROOFING

PART 1 – GENERAL

1.1 PURPOSE

A. This guideline is intended to provide useful information to the Professional Service Provider (PSP) to establish a basis of design. PSP is to apply the principles of this section such that the University of Texas at Arlington (UTA) may achieve a level of quality and consistency in the design and construction of their facilities. Deviations from these guidelines must be approved by UTA and may require justification through Life Cycle Cost (LCC) analysis and submitted to UTA for approval.

1.2 LESSONS LEARNED AND DESIGN CONSIDERATIONS

A. Intumescent mastic fireproofing shall be used at exposed steel.

B. Careful coordination is required with paint topcoat.

1.3 SECTION INCLUDES

A. Thin-film intumescent fire resistive coatings for exposed structural steel.

B. Protective and/or decorative topcoats.

1.4 RELATED REQUIREMENTS

A. Section 05 12 00 – Structural Steel Framing.

B. Section 07 81 00 – Applied Fireproofing: Conventional cementitious and mineral fiber fireproofing.

C. Section 09 91 23 – Interior Painting: Field-applied paints matching intumescent fireproofing.

1.5 REFERENCE STANDARDS

A. ASTM D2240 - Standard Test Method for Rubber Property--Durometer Hardness; current edition.

B. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials; current edition.

1.6 SUBMITTALS

A. See Division 01 for submittals procedures.

B. Product Data: Manufacturer's data sheets on each product to be used, including:

1. Performance characteristics and test results.
2. Preparation instructions and recommendations.
3. Storage and handling requirements and recommendations.
4. Installation methods.

C. Verification Samples: For each thickness, color, sheen, and finish required, samples not less than 4 inches square on steel substrate, illustrating finished appearance.

D. Test Reports: Published fire resistive designs for structural elements of the types required for the project, indicating hourly ratings of each assembly.

E. Certificates: Certify that intumescent fireproofing provided for this project meets or exceeds specified requirements in all respects.

1.7 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company that specializes in manufacturing the type of products specified, with minimum of 10 years of documented experience.

B. Installer Qualifications: Approved, certified, or supervised by manufacturer of intumescent fireproofing, with not less than 5 years of documented experience.

C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship. Approved mock-up will serve as a standard of comparison for subsequent work of this section.

1. Finish at least 100 sq ft of steel in areas designated by Architect.
2. Evaluate mock-up for compliance with specified requirements, including thickness and finish texture.
3. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
4. Refinish mock-up area as required to produce acceptable work.
5. Approved mock-up may remain as part of the project if approved.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in manufacturer's original, unopened containers with identification labels and testing agency markings intact and legible.

B. Store products in manufacturer's unopened packaging until ready for installation.

1. Store at temperatures not less than 50 degrees F in dry, protected area.
2. Protect from freezing, and do not store in direct sunlight.
3. Dispose of any materials that have come into contact with contaminants of any kind prior to application.

C. Dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.9 FIELD CONDITIONS

A. Protect areas of application from windblown dust and rain.

B. Maintain ambient field conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under ambient conditions outside manufacturer's absolute limits.

1. Provide temporary enclosures as required to control ambient conditions.
2. Do not apply intumescent fireproofing when ambient temperatures are below 50 degrees F without specific approval from manufacturer.
3. Maintain relative humidity between 40 and 60 percent in areas of application.
4. Maintain ventilation in enclosed spaces during application and for not less than 72 hours afterward.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Intumescent Fireproofing:

1. Albi Manufacturing Division of StanChem Inc: www.albi.com.
2. Carboline Company: www.carboline.com.
3. Substitutions: See Division 01.

2.2 SYSTEM REQUIREMENTS

A. Fireproofing: Provide intumescent thin-film fire resistive coating systems tested by an independent testing agency in accordance with ASTM E119 and acceptable to authorities having jurisdiction (AHJ).

1. Provide assemblies listed by UL or FM and bearing listing agency label or mark.

B. Structural Steel Columns: Fire resistance rating of 2 hours.

2.3 MATERIALS

A. Fire Resistive Coating System: Thin film intumescent coating system for the fire protection of structural steel.

1. For Interior Use:
   a). Use only water-based products.
   b). Hardness: 45, minimum, when tested in accordance with ASTM D2240, Type D durometer.
   c). Basis of Design: Carboline Company; FIREFILM III

B. Protective and Decorative Top Coating: As recommended by fireproofing manufacturer for exposure conditions.

1. Color and Gloss: Match Architect's sample.
2. Coordinate with paint, as selected by Architect, color and sheen match between steel coated with intumescent coating and adjacent painted surfaces.

C. Sealers and Primer: As required by tested and listed assemblies, and as recommended by fireproofing manufacturer to suit specific substrate conditions.

D. Reinforcement: Glass fiber fabric matching type used in tested and listed assemblies.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine substrates to determine if they are in satisfactory condition to receive intumescent fireproofing. Verify that they are clean and free of oil, grease, incompatible primers, or other foreign substances capable of impairing bond to fireproofing system.

B. Do not begin installation until substrates have been properly prepared. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A. Thoroughly clean surfaces to receive fireproofing.
B. Repair substrates to remove surface imperfections that could affect uniformity of texture and thickness of fireproofing system. Remove minor projections and fill voids that could telegraph through the finished work.
C. Cover or otherwise protect other work that might be damaged by fallout or overspray of fireproofing system. Provide temporary enclosures as necessary to confine operations and maintain required ambient field conditions.

3.3 INSTALLATION

A. Comply with manufacturer's instructions for particular conditions of installation in each case.
B. Apply manufacturer’s recommended primer to required coating thickness.
C. Apply fireproofing to full thickness over entire area of each substrate to be protected. Apply coats at manufacturer’s recommended rate to achieve dry film thickness required for fire resistance ratings designated for each condition.
D. Apply intumescent fireproofing by spraying to maximum extent possible. If necessary, complete coverage by roller application or other method acceptable to manufacturer.
E. Achieve uniform finished appearance complying with approved mock-up.

3.4 FIELD QUALITY CONTROL

A. Testing Laboratory: Owner will employ and pay for field quality control testing of intumescent fireproofing by an independent testing laboratory.
B. Repair or replace fireproofing at locations where test results indicate fireproofing does not meet specified requirements.

3.5 CLEANING

A. Immediately after installation of fireproofing in each area, remove overspray and fallout from other surfaces and clean soiled areas.

3.6 PROTECTION

A. Protect installed intumescent fireproofing from damage due to subsequent construction activities, so fireproofing is without damage or deterioration before Date of Substantial Completion.
B. Touch-up, repair or replace damaged products before Date of Substantial Completion.

END OF SECTION