



# **International Fireproof Technology, Inc.**

17528 Von Karman Ave. Irvine, CA 92614

Office: 949-975-8588

## Section 078120 - Intumescent Fire Resistive Material

### PART 1 - GENERAL

#### 1.1 SCOPE

- 1.1.1 This specification covers labor, materials, equipment, and application necessary for, and incidental to, the complete and proper installation of intumescent fire protection for application to Spray Polyurethane Foam in accordance with all applicable requirements of contract documents.
- 1.1.2 This specification shall be supplemented by the applicable requirements of building codes, insurance rating organizations and all other authorities having jurisdiction.

#### 1.2 SECTION INCLUDES

- 1.2.1 Intumescent fire protection material.
- 1.2.2 Topcoat protective decorative finish.

#### 1.3 RELATED SECTIONS

- 1.3.1 Section 072119: Thermal Insulation
- 1.3.2 Section 078110: Spray-Applied Fire Resistive Material.
- 1.3.4 Section 072700: Firestopping and Smoke Seals.
- 1.3.5 Section 099000: Painting.

#### 1.4 REFERENCES

- 1.4.1 National Fire Protection Association.
- 1.4.3 Test Standards
  - a) NFPA 286 - STANDARD METHODS OF FIRE TESTS FOR EVALUATING CONTRIBUTION OF WALL AND CEILING INTERIOR FINISH TO ROOM FIRE GROWTH.
  - b) CAN/ULC 9705- FULL SCALE ROOM TEST FOR SURFACE PRODUCTS
  - c) ASTM E84 (UL723, CAN/ULC-S102) - Surface Burning Characteristics of Building Materials. Class A Rating Required; Flame Spread Maximum: 25 and Smoke Developed Maximum: 150.
  - d) ASTM D4541 Adhesion, Pull-Off Strength applied to SPF: 50 psi
  - e) ASTM D4541 Adhesion, Pull-Off Strength – Concrete: 200 psi

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- f) ASTM D3359 Tape Adhesion: 5B
- g) ASTM D 2697: Test Method for Volume Nonvolatile Matter in Clear or Pigmented Coatings – Maximum variation 0.50%
- h) CA/DHS/EHLB/R-174 (CAL1350): Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers

1.4.4 Material manufacturer's current surface preparation guide.

1.4.5 Material manufacturer's current published information including, but not limited to, application guide.

1.4.6 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.

### 1.5 SYSTEM DESCRIPTION

1.5.1 The intumescent fire protection materials shall be applied at the required thickness to provide the tested fire resistive ratings.

### 1.6 SUBMITTALS

1.6.1 Manufacturer's Data: Submit manufacturer's specifications, including independent laboratory physical property test reports and certifications as may be required to show material compliance with contract documents.

### 1.7 QUALITY ASSURANCE

1.7.1 Manufacturer - Company specializing in manufacturing fire protection products.

1.7.2 The intumescent fire resistive material shall be manufactured under the Follow-Up Service program of WH Intertek and bear the WH and/or WH/C label (mark), or equivalent third party quality assurance program.

1.7.3 Applicator - A firm with expertise in the installation of fire resistive or similar materials having been trained by the manufacturer of the IFRM.

1.7.4 Product - The product shall be approved by the architect and applicable authorities having jurisdiction. Acceptable products include  
-International Fireproof Technology DC315  
-Approved topcoat that has been investigated so as not to negatively affect the fire resistive properties of the IFRM.

### 1.8 DELIVERY, STORAGE AND HANDLING

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- 1.8.1 Deliver materials to the project in manufacturer's unopened packages, fully identified as to trade name, type and other identifying data. Packaged materials shall bear the appropriate labels, seals and WHI and/or UL label (mark) for fire resistive ratings and shall be stored at temperatures in compliance with manufacturer instructions in a dry interior location away from direct sunlight.  
DO NOT FREEZE.

## 1.9 PROJECT/SITE CONDITIONS

- 1.9.1 A minimum substrate and ambient temperature of 50° F (10° C) shall be maintained prior to, during, and a minimum of 72 hours after application. If necessary for job schedule, the General Contractor shall provide enclosures and heat to maintain proper temperatures and humidity levels in the application areas.
- 1.9.2 In enclosed areas, ventilation shall not be less than 4 complete air exchanges per hour until the material is dry.
- 1.9.3 Relative humidity shall not exceed 85% throughout the total period of application and drying for the intumescent fire resistive material, and must not exceed 85% throughout the application and drying for the protective decorative topcoat.

## 1.10 SEQUENCING AND SCHEDULING

- 1.10.1 Applicator shall cooperate in the coordination and scheduling of fire protection work to avoid delays in job progress.
- 1.10.2 The installation of piping, ducts, conduit or other suspended equipment shall not commence until the application of the thin-film fire resistive material is complete in that area.

## PART 2 - PRODUCTS

### 2.1 COMPATIBLE BONDING PRIMER

- 2.1.1 Primer, if required, shall be approved by manufacturer and applied in full accordance with the manufacturer's written instructions. Application rate shall be NOT LESS than 3 mils WFT and NOT MORE than 5 mils WFT.  
Acceptable product- Sherwin Williams DTM Bonding Primer or comparable as recommended by manufacturer.
- 2.1.2 Primer shall be required as per Certified test report for specific SPF system being installed,  
OR
- 2.1.3 When the intended end use of building requires a large variation in temperature and IFRM will be exposed to freeze/thaw cycling a primer shall be applied.

### 2.2 INTUMESCENT FIRE PROTECTION SYSTEM

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- 2.2.1 The intumescent fire resistive material shall be Paint to Protect DC315 as supplied by International Fireproof Technology Inc.
- 2.2.2 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 NFPA 286, UL1715, FM4880, CAN/ULC/ or ISO 9705 and ASTM E84 (ULC S102), and reported by a recognized and accredited laboratory by IAS or SCC.
- 2.2.3. Thin-Film Fire-Resistive Intumescent Coating: Single Component Factory-mixed formulation.
  - A. Water-Based Formulation: Approved by manufacturer and authorities having jurisdiction for indicated use.
  - B. Verify with manufacturer that products selected are suitable for use indicated.
  - C. Fire Tested Designs Only based on UL 1715, NFPA 286, CAN/ULC 9705 or FM4880.
  - D. Minimum Shore D Hardness of 40 before the topcoat and finish coat is applied.
  - E. A representative mock-up sprayed Architectural finish sample must be submitted, reviewed, and accepted by the architect in advance.
  - F. Product and manufacturing facilities shall conform to a recognized third party quality assurance and follow up inspection program.
- 2.3 DECORATIVE and/or PROTECTIVE TOPCOATING
  - 2.3.1 For interior conditioned spaces topcoat materials shall be as required for color-coding, aesthetics or additional surface protection, and approved by the thin-film fire resistive material manufacturer. Application rate shall be NOT LESS THAN 3 mils WFT and NOT MORE THAN 8 mils WFT
    - 2.3.1.1 Acceptable product – Sherwin Williams Promar 200, Promar 400,
  - 2.3.2 For interior unconditioned spaces or areas subject to high humidity a protective topcoat must be applied over the DC315 as per manufacturer's recommendations.
    - 2.3.2.1 Acceptable Product- Sherwin Williams Steel Master 9500  
Sherwin Williams DTM Pro Industrial Acrylic  
Sherwin Williams Vapor Barrier Primer Finish
  - 2.3.3 For exterior applications with DC315, a two component polyurethane top coat must be applied over the DC315 as per manufacturer's recommendations. Contact manufacturer for current recommendation.

### **PART 3 – EXECUTION**

#### **3.1 PREPARATION**

- 3.1.1 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



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material shall be the responsibility of the General Contractor or SPF Contractor, as outlined in the Thermal Insulation section.

- 3.1.2 Confirm compatibility of surfaces to receive thin-film fire resistive material. Refer to test report for the applicable brand and type of SPF to verify if a primer is required. Required surfaces shall be primed with a compatible primer approved by the thin-film fire resistive material manufacturer.
- 3.1.3 Provide masking, drop cloths or other suitable coverings to prevent overspray onto surfaces not intended to be coated with intumescent coating.

### 3.2 APPLICATION

- 3.2.1 The thin-film fire resistive material shall be applied at the required dry film thickness per the appropriate SPF test report and manufacturers written application instructions.
- 3.2.2 The thin-film fire resistive material shall be spray applied using airless spray equipment that meets the minimum requirements set forth in manufacturer's installation documents.

### 3.3 MOCK UP

- 3.3.1 Before proceeding with the work, the applicator shall apply the thin-film fire resistive material to a section witnessed by the architect's or owner's representative. The application shall be subject to their approval and shall be used as a guide for texture and thickness of the finished work.

### 3.4 CLEAN UP AND REPAIR

- 3.4.1 Upon completion of installation, all excess material, overspray and debris shall be cleared and removed from the job site.
- 3.4.2 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.

### 3.5 INSPECTION AND TESTING

- 3.5.1 Applicator shall perform continuous Wet Film Thickness checks, minimum 1 per 100 square feet. Medallions shall be installed at minimum of 1 per 400 square feet and shall be maintained with contract documents for verification of Dry Film Thickness. Applicator shall complete a daily work report that includes ambient conditions, application thickness and results of adhesion testing. Upon completion a job site label shall be affixed in an area such as the electrical panel and shall include applicator name and contact information, company



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information, products used, measured application thickness. Job work reports must be submitted to manufacturer within 7 days of completion of project.

- 3.5.2 The results of the installed thickness tests shall be made available to all parties at the completion of each area and approved prior to the application of topcoat.