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This MANU-SPEC® utilizes the Construction Specifications Institute (CSI) *Manual of Practice*, including *MasterFormat*™, *SectionFormat*™ and *PageFormat*™. A MANU-SPEC is a manufacturer-specific proprietary product specification using the proprietary method of specifying applicable to project specifications and master guide specifications. Optional text is indicated by brackets (); delete optional text in final copy of specification. Specifier Notes typically precede specification text; delete notes in final copy of specification. Trade/brand names with appropriate symbols typically are used in Specifier Notes; symbols are not used in specification text. Metric conversion, where used, is soft metric conversion.

This MANU-SPEC specifies Firefree88 intumescent paint, which is capable of providing a fire resistant barrier on a variety of substrates. This product is manufactured by International Fire Resistant Systems, Inc. Revise MANU-SPEC section number and title below to suit project requirements, specification practices and section content. Refer to CSI *MasterFormat* for other section numbers and titles.

SECTION 09967
INTUMESCENT PAINTS

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: Intumescent coating capable of providing a fire resistant barrier on a variety of substrates.

Specifier Note: Revise paragraph below to suit project requirements. If a reader of this section could reasonably expect to find a product or component specified in this section, but it is actually specified elsewhere, then the related section number(s) should be listed in the paragraph below. Add section numbers and titles per CSI *MasterFormat* and specifier's practice. In the absence of related sections, delete paragraph below.

- B. Related Sections:
 - 1. Division 9 Section: Painting.

Specifier Note: Article below may be omitted when specifying manufacturer's proprietary products and recommended installation. Retain Reference Article when specifying products and installation by an industry reference standard. If retained, list standard(s) referenced in this section. Indicate issuing authority name, acronym, standard designation and title. Establish policy for indicating edition date of standard referenced. Conditions of the Contract or Division 1 References Section may establish the edition date of standards. This article does not require compliance with standard, but is merely a listing of references used. Article below should list only those industry standards referenced in this section.

1.02 REFERENCES

- A. American Society for Testing and Materials (ASTM):
 - 1. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials.
 - 2. ASTM E119 Standard Test Methods for Fire Tests of Building Construction and Materials.
 - 3. ASTM E736 Standard Test Method for Cohesion/Adhesion of Sprayed Fire-Resistive Materials Applied to Structural Members.
- B. Underwriters Laboratories, Inc. (UL):

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1. UL 263 Standard for Safety for Fire Tests of Building Construction and Materials.
2. UL 723 Standard for Safety for Surface Burning Characteristics of Building Materials.
- C. Underwriters' Laboratories of Canada, Ltd. (ULC):
 1. ULC S101 Fire Endurance Test of Building Construction and Materials.
 2. ULC S102 Surface Burning Characteristics of Building Materials and Assemblies.
- D. National Fire Protection Association (NFPA):
 1. NFPA 251 Standard Methods of Tests of Fire Endurance Building Construction and Materials.
- E. Uniform Building Code (UBC):
 1. UBC 26-2: Test Method for the Evaluation of Thermal Barriers.
 2. UBC 26-3: Room Fire Test Standard for Interior of Foam Plastic Systems.

Specifier Note: Article below should be restricted to statements describing design or performance requirements and functional (not dimensional) tolerances of a complete system. Omit descriptions to composite and operational properties to extent necessary to link multiple components of a system and to interface with other systems.

Specifier Note: International Fire Resistant Systems, Inc., has tested its Firefree88 product in various fire resistance rated assemblies. Contact manufacturer for more information. Retain, edit or delete article below to suit project requirements and specifier practice. Coordinate language with requirements of other specification sections and working drawings to ensure assemblies are accurately specified and properly constructed.

1.03 SYSTEM DESCRIPTION

- A. Design Requirements: Provide fire resistance rated assemblies which have been designed and tested in compliance with the following:
 1. (ASTM E119) (UL 263) (ULC 263) (ULC S101) (NFPA 251) (UBC 26-2) (UBC 26-3).
- B. Performance Requirements: Provide a fire resistive intumescent coating as part of a system which has been properly constructed to provide the fire resistance rating(s) required below.
 1. (One-Hour Wood Stud Exterior Bearing Wall Assembly: Western Fire Center Report #01003, March 5, 2001).
 2. (Two-Hour Wood Stud Bearing Wall Assembly: Forest Products Laboratory, University of California at Berkeley Report #35.04.439, September 1998, ICBO ER-5526).
 3. (One-Hour Wood Stud Bearing Wall Assembly: Western Fire Center Report #00089TIT2, October 19, 2000).
 4. (Two-Hour Floor Ceiling Assembly: Western Fire Center Report #00124T1, December 29, 2000).
 5. (Fifteen-Minute Fire Barrier: Western Fire Center Report #99063, October 6, 1999).
 6. (One-Hour Floor Ceiling Assembly:
 - a. Joists 16" (406 mm) on centers: Western Fire Center Report #99053, August 23, 1999.
 - b. Joists 24" (610 mm) on centers: Western Fire Center Report #99053, August 23, 1999).
 7. (One-Hour Floor Ceiling Assembly: Western Fire Center Report #00019, March 7, 2000).
 8. (One-Hour Floor Ceiling Assembly: Western Fire Center Report #99067, December 8, 1999).
 9. (One-Hour Roof Ceiling Assembly: Western Fire Center Report #99079, December 17, 1999).
 10. (One-Hour Floor Ceiling Assembly: Intertek Testing Services (Warnock-Hersey) Report #WHI-495-PSH-0245/0246, June 16, 2000, ICBO ER-5857).
 11. (Fifteen-Minute Fire Barrier: Western Fire Center Report #99070, December 30, 1999).
 12. (One-Hour Floor Ceiling Assembly: Western Fire Center Report #00019, May, 24 2000).

Specifier Note: Article below includes submittal of relevant data to be furnished by Contractor either before, during or after construction. Coordinate this article with Architect's and Contractor's duties and responsibilities in Conditions of the Contract and Division 1 Submittal Procedures Section.

1.04 SUBMITTALS

- A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.
- B. Product Data: Submit manufacturer's product data and application instructions.
- C. Samples: Submit selection and verification samples for finishes, colors and textures.
- D. Quality Assurance/Control Submittals: Submit the following:
 - 1. Test Reports:
 - a. Submit test reports showing compliance with specific performance characteristics and physical properties.
 - b. Submit fire test result reports, from fire test laboratories recognized by the code authority having jurisdiction, for the assemblies specified.
 - 2. Certificates:

Specifier Note: Retain, edit or delete subparagraphs below to suit project requirements.

- a. Submit manufacturer's certification of product compliance with applicable building code.
- b. Submit manufacturer's certification that the applicator meets the requirements specified in this section.
- 3. Manufacturer's Field Reports: Submit field inspection reports specified in this section.

Specifier Note: Article below should include prerequisites, standards, limitations and criteria which establish an overall level of quality for products and workmanship for this section. Coordinate article below with Division 1 Quality Assurance Section.

1.05 QUALITY ASSURANCE

Specifier Note: Paragraph below should list obligations for compliance with specific code requirements particular to this section. General statements to comply with a particular code are typically addressed in Conditions of the Contract and Division 1 Regulatory Requirements Section. Repetitive statements should be avoided.

- A. Applicator Qualifications: Utilize an applicator approved and trained by the manufacturer and experienced in performing the work of this section on projects of similar scope and scale.
- B. Regulatory Requirements and Approvals: (Specify applicable requirements of regulatory agencies.) (ICBO).
- C. Mock-Ups: Construct representative samples using specified product and manufacturer's recommended installation methods for Architect's approval of finish color, texture, pattern and work standards. Comply with Division 1 Quality Control (Mock-Up Requirements) Section.
 - 1. Mock-up may be incorporated into final construction upon Owner's approval.

Specifier Note: Retain, edit or delete paragraph below to suit project requirements. Coordinate this paragraph with requirements of Field Quality Control article in Part 3 of this section.

- D. Field Samples: At owner's expense, the (Owner) (Architect) (Engineer) will select a qualified independent testing agency, not affiliated with the applicator, to verify that preparation of substrate and application thickness of the intumescent coating complies with the requirements specified.

Specifier Note: Retain, edit or delete paragraph and subparagraph below to suit project requirements.



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- E. Preinstallation Meetings: Conduct a preinstallation meeting to review project requirements, substrate conditions, manufacturer's installation recommendations and warranty requirements. Comply with Division 1 Project Management and Coordination (Project Meetings) Section.
 - 1. Preinstallation Testing: Conduct preinstallation testing as follows: (Specify substrate testing).

Specifier Note: Article below should include special and unique requirements. Coordinate article below with Division 1 Product Requirements Section.

1.06 DELIVERY, STORAGE & HANDLING

- A. General: Comply with Division 1 Product Requirement Section.
- B. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- C. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer. Do not allow materials to freeze at any time prior to application.
- D. Do not apply any materials that have been frozen or have come into contact with contaminants prior to use. Immediately remove any such materials from the jobsite.

Specifier Note: Firefree88 must be protected from moisture during the entire application and drying period, until it has completely dried and has been coated with any subsequent materials. Ambient air and surface temperatures must not be less than 50 degrees F (10 degrees C). The recommended application temperature is 68 degrees F (20 degrees C). High humidity will hinder drying and will extend recoating and top coating times. Firefree88 must be dry to the touch before recoating or top coating. Inadequate drying between coats or application during high humidity conditions may contribute to sagging. Relative humidity from 40 - 60% in the work area is recommended. Temporary enclosures, heat and moisture control may be required to maintain acceptable conditions. Electric heat is recommended where supplemental heat is required. Industrial dehumidifiers are recommended.

1.07 PROJECT/SITE CONDITIONS

- A. Environmental Requirements:
 - 1. Minimum temperature of 50 degrees F (10 degrees C) during, and for a period of 2 hours after, product application.
 - 2. Provide air circulation adequate to promote drying.
 - 3. Protect application site from rain, fog, high humidity or other forms of moisture during, and for a period of at least 24 hours after, application of intumescent coating.

1.08 WARRANTY

- A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.
- B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under contract documents.

Specifier Note: Coordinate paragraph below with manufacturer's warranty requirements.

- 1. Warranty Period: (10) years commencing on Date of Substantial Completion.

PART 2 PRODUCTS

Specifier Note: Retain article below for proprietary method specification. Add product attributes, performance characteristics, material standards and descriptions as applicable. Use of such phrases as "or equal" or "or approved equal" or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining "or equal" products.

2.01 INTUMESCENT PAINT

Specifier Note: Paragraph below is an addition to CSI *SectionFormat* and a supplement to MANU-SPEC. Retain or delete paragraph below per project requirements and specifier's practice.

- A. Manufacturer: International Fire Resistant Systems, Inc.
 - 1. Contact: 580 Irwin Street, Suite 1, San Rafael, CA 94901; Telephone: (888) 990-3388, (415) 459-6488; Fax: (415) 459-6055; E-mail: info@firefree.com; website: www.firefree.com.

Specifier Note: International Fire Resistant Systems, Inc., Firefree88 intumescent paint.

- B. Proprietary Products/Systems: Intumescent paint, including the following:
 - 1. FireFree88:
 - a. Material: Water based latex.
 - b. Solids: 68%.
 - c. Color: (Standard Off-White) (Custom Tinted: (Specify color)).
 - d. Sheen: Flat.
 - e. Volatile Organic Compounds (VOCs): 33 grams/liter.
 - f. Surface Burning Characteristics: Class A (ASTM E84).
 - g. Quality Control Requirements: Manufactured under UL Factory Follow-up Program. Each container or package shall bear UL label.

Specifier Note: Edit Article below to suit project requirements. If substitutions are permitted, edit text below. Add text to refer to Division 1 Project Requirements (Product Substitutions Procedures) Section.

2.02 PRODUCT SUBSTITUTIONS

- A. Substitutions: No substitutions permitted.

PART 3 EXECUTION

Specifier Note: Article below is an addition to the CSI *SectionFormat* and a supplement to MANU-SPEC. Revise article below to suit project requirements and specifier's practice.

3.01 MANUFACTURER'S INSTRUCTIONS

- A. Comply with the instructions and recommendations of the intumescent paint manufacturer.
- B. Work includes complete preparation and finishing of all surfaces described in articles below.

3.02 EXAMINATION

- A. Site Verification of Conditions:
 - 1. Inspect all surfaces scheduled to receive intumescent paint to ensure compliance with manufacturer's requirements for a successful application.
 - 2. Do not proceed with application until unsatisfactory substrate conditions have been corrected.

3.03 PREPARATION

- A. Protection:
 - 1. Protect unpainted surfaces, lawns, shrubbery and adjacent surfaces against paint drops or spills. Repair damage resulting from inadequate protection.
 - 2. Furnish sufficient drop cloths, shields and protective equipment to prevent spray or splatter from fouling surfaces not being painted.

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3. Protect all surfaces, equipment, and fixtures from damage resulting from use of fixed, movable and hanging scaffolding, planking and staging. Repair damage resulting from inadequate protection.
- B. Surface Preparation:
 1. All surfaces must be clean, cured, firm, dry and free of oil, grease, wax, dust or loose, chalky or deteriorated coatings.

3.04 APPLICATION

Specifier Note: Manufacturer does not recommend application of product to aluminum, copper, brass, stainless steel, nickel or chrome, finish hardware, electrical or mechanical fixtures or receptacles or to exterior concrete pavements.

- A. Protect work from rain, fog, high humidity or other forms of moisture during application, and for a period of at least 24 hours after application.
- B. Mix product according to manufacturer's recommendations. Do not thin or strain.

Specifier Note: Some substrates may require a specific primer and other special preparation. Consult manufacturer for further information.

Specifier Note: Manufacturer recommends spray application; however, Firefree88 may also be applied with a brush or roller.

- C. Apply using (Spray) (Brush) (Roller).
- D. Apply at a rate of approximately 125 ft²/gal (3.2 m²/L) to obtain a dry film thickness of 10 mil (0.25 mm). (Specify alternative application rate and dry film thickness.).

Specifier Note: Edit, retain or delete paragraphs below to comply with requirements of project and specifier practice.

- E. Enamel Finish Coat: Apply 1 coat of PVA sealer or 1 coat of oil based primer over Firefree88 before applying a latex enamel or oil based enamel finish coat.
- F. Wall Covering: Apply 1 coat of wall primer over product before applying wallcovering.

Specifier Note: Although Firefree88 has a flat finish, it may coated with most paints to achieve a desired texture and finish. For information on approved compatible primers and finish paints, contact manufacturer.

- G. Apply additional finish coats over the intumescent paint only after it has completely cured.

3.05 FIELD QUALITY CONTROL

Specifier Note: If inspection services are required, retain the paragraph below. Coordinate this paragraph with the Field Samples requirements of the Quality Assurance article in Part 1 of this section.

- A. Inspection:
 1. The independent testing agency will ensure that preparation of substrate is in accordance with manufacturer's recommendations.
 2. The testing agency will randomly obtain and test samples during application to verify that wet film thickness of the intumescent coating complies with requirements of this section.
 3. Work not in compliance will be rejected and shall immediately be brought into compliance by the applicator.

3.06 PROTECTION

- A. Protect work from damage during subsequent construction.

END OF SECTION