

1. General

1.1. Summary

1.1.1. This Section includes requirements for supply and installation of intumescent fire protection for wood & Gypsum Board, meeting the requirements of building codes, insurance rating organizations, and authorities having jurisdiction.

1.2. Related Requirements

1.2.1. Section 09 90 00 – Painting and Coating

1.2.2. Section 09 96 43 – Fire Retardant Coating

1.2.3. Section 09 96 46 – Intumescent Coatings

1.3. Reference Standards

1.3.1. American Society for Testing and Materials (ASTM):

1.3.1.1. ASTM E84-09, Standard Test Method for Surface Burning Characteristics of Building Materials.

1.3.1.2. ASTM E119, Fire Endurance Test of Building Construction and Material.

1.3.1.3. ASTM E162, Standard Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source.

1.3.2. Underwriters Laboratories of Canada

1.3.2.1. CAN/ULC S101, Fire Endurance Test of Building Construction and Material.

1.3.2.2. CAN/ULC S102-18, Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.

1.3.3. National Fire Protection Association

1.3.3.1. NFPA 251 – Standard Methods of Tests of Fire Endurance Building Construction and Materials.

1.4. Administrative Requirements

1.4.1. Preconstruction Meetings: Arrange for a preconstruction meeting to confirm installation methods and materials in accordance with [Section 01 31 19 – Project Meetings], attended by [Constructor], installing [Subcontractor], Consultant and Owner.

1.5. Submittals

1.5.1. Provide required information in accordance with [Section 01 33 00 – Submittal Procedures].

1.5.2. Action Submittals: Provide the following submittals before starting any work of this Section:

1.5.2.1. Provide documentation showing VOC content for paints and coatings to be used on interior surfaces.

1.5.2.2. Manufacturer's Data sheets for every product on the project.

1.5.2.3. Preparation instructions and recommendations.

1.5.2.4. Storage and Handling requirements and recommendations.

- 1.5.2.5. Recommended Installation methods.
- 1.5.2.6. Manufacturer's recommended application rate and dry film thickness (DFT) for each separate coat for each type of substrate to be painted.
- 1.5.2.7. Manufacturer's certification that the minimum performance standards can be met and test reports supplied as requested.

- 1.5.2.8. Verification Samples: Two representative units of each type, size, pattern, and color.

- 1.5.2.9. Shop Drawings.

1.6. Quality Assurance

- 1.6.1. Manufacturer's qualifications: Company specialized and experienced in the production of intumescent passive fire protection products. A minimum of five years documented experience.
 - 1.6.1.1. Third party on site inspections are recommended to ensure that the dry film thickness complies with manufacturer's recommendation.
- 1.6.2. Applicator Qualifications: An experienced painting contractor or coatings firm, or an individual experienced in applying similar materials.
 - 1.6.2.1. Approval: Licensed-experienced Contractor-Applicator.
 - 1.6.2.2. Similar Projects: The Applicator shall be able to provide a comprehensive list of the five (5) intumescent coating or comparable jobs, including the Supervising contractor, inspector or authority having jurisdiction.
 - 1.6.2.3. Staffing: The Applicator shall show proof before commencement of work that he will maintain a qualified crew throughout the duration of the work.
- 1.6.3. Mock-up: Construct a mock-up with actual materials in sufficient time for Architect's review and to not delay construction progress. Locate mock-up as acceptable to Architect and provide temporary foundations and support.
 - 1.6.3.1. The intent of mock-up is to demonstrate quality of workmanship and visual appearance.
 - 1.6.3.2. If mock-up is not acceptable, rebuild mock-up until satisfactory results are achieved.
 - 1.6.3.3. Retain mock-up during construction as a standard for comparison with completed work.
 - 1.6.3.4. Do not alter or remove mock-up until work is completed or removal is authorized.
 - 1.6.3.5. Mock-up may be incorporated into final construction upon owner approval.

- 1.6.4. Installation: Verify wood surfaces have been properly prepared, and install intumescent coatings in accordance with manufacturer's written recommendations published in their product technical literature and/or provided by manufacturer.

1.7. Delivery, Storage and Handling

- 1.7.1. Delivery and Acceptance Requirements: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.

1.7.2.Storage and Handling Requirements: **Do Not Freeze** Store materials in a clean, dry area in accordance with manufacturer's instructions; protect materials during handling and application to prevent damage or contamination.

1.8. Site Conditions

1.8.1.Temperature: Maintain temperature of steel substrates and ambient air to a minimum of 10 degrees C (50 degrees F) during application and for 72 hours after application in accordance with Manufacturer's written instructions.

1.8.2.Ventilation: Provide a minimum of 4 air changes per hour during application and curing of fire retardant coating.

1.8.3.Relative Humidity: Limit relative humidity to a maximum of 85% RH during application and drying of intumescent coatings.

2. Products

2.1. Manufacturers

2.1.1.Acceptable Manufacturer: Quantum Chemical, 780 458 3355, 15 Riel Drive, St. Albert, Alberta, Canada, T8N 3Z2. **[No substitutions] [Substitutions accepted as follows:].**

2.1.1.1. Substitutions: Consultant may consider additional manufacturers having similar products to Acceptable Products Manufacturers listed above provided they submit requests for substitution in accordance with Section 01 25 00 – Substitution Procedures before starting any work of this Section:

2.1.1.1.1. Do not use substitute materials to establish Bid Price.

2.1.1.1.2. Substitutions that appear as a part of the project without review and acceptance by the Consultant will be rejected, and replaced with one of the specified materials.

2.2. Performance Requirements

2.2.1.General:

2.2.1.1. Material Compatibility:

2.2.1.1.1. Provide Materials for use in the passive fire protection system that are compatible with one another, including any top coat paint product added for aesthetic purposes. Ensure provided intumescent products are compatible with the intended substrates and with the service conditions, as demonstrated by the manufacturer, based on testing and field experience.

2.2.1.1.2. For each intumescent coating/substrate combination provide the recommended wet and dry film application thickness in writing from the paint manufacturer, in order to achieve the specified fire performance

2.2.2.Provide Intumescent fire retardant coating meeting Class A Flame Spread and Smoke Developed Rating, tested Intertek Testing Services NA Ltd. or another certified, independent testing laboratory.

2.2.3.Provide Intumescent fire retardant coating in compliance with all drawings and specifications and the following performance criteria:

- 2.2.3.1. ASTM E84/CAN/ULC S102, Class A Flame Spread and Smoke Developed Index of 20 or less. (SafeCoat® Latex applied at 150 sq. ft. per gallon) on Douglas Fir Lumber, SPF Plywood, and Oriented Strand Board.
- 2.2.3.2. ASTM E119/ CAN/ULC S101 of 17 minutes on 3/8" OSB Sheathing (SafeCoat® Latex applied at 160 sq. ft. per gallon)
- 2.2.3.3. VOC Content: 0.2 lbs/USG, 25 g/l.
- 2.2.3.4. Percent Solids by Volume 47%.

2.2.4. Basis-of-Design Product: SafeCoat® Latex, Quantum Chemical, 780 458 3355, www.quantumchemical.com

3. Execution

3.1. Preparation

- 3.1.1. Ensure the substrates have been properly prepared and constructed prior to beginning installation.
- 3.1.2. If substrate preparation is the responsibility of another installer, notify Architect in writing of unsatisfactory preparation before proceeding.
- 3.1.3. Examine substrates and conditions, with applicator present for compliance with manufacturer's requirements.
 - 3.1.3.1. Surface Preparation: provide clean, dry surface free of contamination.
 - 3.1.3.2. Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.
- 3.1.4. Provide drop cloths, masking, or other satisfactory protection for surfaces not to receive coating to prevent damage from overspray.

3.2. Installation

- 3.2.1. Install in accordance with manufacturer's current instructions and the approved submittals.
- 3.2.2. Apply intumescent paints according to manufacturer's written instructions and to comply with requirements of for fire retardant coating classification.
- 3.2.3. Provide a uniform finish matching system description submitted with Product Data.
- 3.2.4. Ensure coatings are applied to prepared surfaces as soon as practical after preparation, before the substrate condition can deteriorate.

3.3. Site Quality Control

- 3.3.1. Field Inspection is recommended in accordance with appropriate sections in Division 1.
- 3.3.2. Site Quality Control Reporting: Submit a signed "Quality Control Report for SafeCoat® Products" available from Quantum Chemical, or a signed project summary report on the Quantum QA App available from Quantum Chemical.

3.4. Closeout Activities

- 3.4.1. Protection
 - 3.4.1.1. Areas subject to overspray that are to remain permanently exposed as detailed on the drawing, must be protected to prevent contact with coating.

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

4. END OF SECTION