Revision Date: 07/29/2021

1. **Design Criteria**:
    a. Intumescent coatings shall be used where structural or architectural elements are exposed to view but require fire-protection.
    b. Water-based and solvent-based coatings are acceptable, but water-based is preferred for interior, site-applied intumescent coatings due to lower VOC (Volatile Organic Chemicals) content.
    c. Intumescent fire protection shall be applied by spraying to the maximum extent possible to make the finish surface smooth and as necessary to complete coverage by roller application or other method acceptable to manufacturer.
    d. Use care when specifying coating thicknesses (and fire rating level) for steel sections not explicitly listed in UL approved systems. UL has several recommendations for designing the proper thickness in their guidance documents that should be reviewed and followed to avoid specifying inadequate coating thicknesses.
    e. Consider gloss or sheen levels when specifying intumescent coatings. Gloss and eggshells are suitable for surfaces that will be contacted or cleaned frequently. Matte finishes shall be reserved for out of reach items that will not receive wear and tear.
    f. Utilize the proper substrate preparation, primers, and topcoats for extended coating lifetime.
    g. Charring distance is a critical factor for the performance of intumescent coatings. Space around coated materials must be left for the coating to expand and protect the coated elements.
        i. Where charring distance cannot be provided, use other products (i.e.: board-based protection products) that do not require expansion to provide the specified protection.
    h. Reserve use of intumescent coatings for items visible from occupied spaces. Use less expensive fireproofing products where items will be concealed from view (i.e.: cementitious rated coatings).
    i. Utilize appropriate sealing topcoats to protect the intumescent coatings from subsequent construction damage and exposure to high humidity levels which degrade the fire protection duration of the paint. Sealers must be an approved part of the tested fire rated assembly.

2. **References**
    a. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency current edition.
    b. ASTM D2240 - Standard Test Method for Rubber Property--Durometer Hardness 2015, with Editorial Revision (2017).
    c. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2020.
    d. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements 2009 (Reapproved 2016).
    e. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials 2020.
    f. SSPC-PA 2 - Procedure for Determining Conformance to Dry Coating Thickness Requirements 2015, with Editorial Revision (2018).
    g. UL 2079 - Standard for Tests for Fire Resistance of Building Joint Systems Current Edition, Including All Revisions.

3. **Required Submittals**:
    a. Product Data: Manufacturer's data sheets on each product to be used, including:
        i. Performance characteristics and test results.
        ii. Preparation instructions and recommendations.
        iii. Storage and handling requirements and recommendations.
        iv. Installation methods.
    b. Selection Samples: For decorative topcoat, color chips representing manufacturer's full range of available colors and sheens. To be selected by Design Consultant and approved by the UVM PM.
    c. Verification Samples: For each thickness, color, sheen, and finish required, submit samples not less than 6 inches square on designated substrate illustrating finished appearance.
    d. Certificates: Certify that intumescent fireproofing provided for this project meets or exceeds specified requirements in all respects.
    e. Test Reports: Published fire resistive designs for structural elements of the types required for the project, indicating hourly ratings of each assembly.
    f. Shop drawings showing areas to be covered and required depth of coating.

g. Mock-ups for intumescent coatings are required to establish standards for aesthetic effects. Mockup shall be at least 16 SF of area.

4. **Products, Materials & Equipment**:
    a. Acceptable Manufacturers may include the following:
        i. Albi Manufacturing Division of StanChem, Inc.
        ii. Contego International, Inc.
        iii. Hilti, Inc.
        iv. Isolatek International Corp
        v. Quantum Chemical
        vi. CEMCO
    b. The surface burning characteristics and VOC content shall comply in accordance with ASTM E84 and meet the requirements of the Design Consultant.
    c. Fire Rating: The required fire rating shall be indicated in the Contract Documents.
    d. Protective and Decorative Top Coating: As recommended by fireproofing manufacturer for exposure and substrate conditions.
        i. Color and Gloss: As selected by the Design Consultant and approved by the UVM PM.

5. **Installation, Fabrication, and Construction**:
    a. Examine substrates to determine if they are in satisfactory condition to receive intumescent fire protection; verify that substrates are clean and free of oil, grease, incompatible primers, or other foreign substances capable of impairing bond to fireproofing system.
    b. Cover or otherwise protect other work that might be damaged by fallout or overspray of fireproofing system and provide temporary enclosures as necessary to confine operations and maintain required ambient field conditions.
    c. Repair or replace intumescent fire protection at locations where test results indicate fireproofing does not meet specified requirements.
    d. Immediately after installation of fireproofing in each area, remove overspray and fallout from other surfaces and clean any soiled areas.
    e. Protect installed intumescent fire protection from damage due to subsequent construction activities, so fireproofing is without damage or deterioration before Date of Substantial Completion.

f. Touch-up, repair or replace damaged products before Date of Substantial Completion.

6. **Warranties**:
   a. Manufacturer's standard warranty on equipment and products.
   b. Installer's standard one-year warranty on installation and craftsmanship.