

# UL Solutions Evaluation Report

**UL ER20543-01**

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**UL Category Code: ULFE – Fire and Smoke Protection**

**CSI MasterFormat®**

DIVISION: 07 00 00 – THERMAL AND MOISTURE PROTECTION  
Sub-level : 07 80 00 – Fire and Smoke Protection  
Sub-level: 07 81 00 – Applied Fireproofing  
Sub-level: 07 81 23 – Intumescent Fireproofing

**COMPANY:**

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**1. Subject**

Types Firefilm III and Firefilm III C intumescent fire-resistive coatings for fireproofing of beams, columns, tubes, and pipes.



## 2. Scope of Evaluation

- 2024 International Building Code ® (IBC)
- 2022 California Building Code (CBC)

The products were evaluated for the following properties:

- Fire-resistance-rated construction
- Surface burning characteristics

## 3. Referenced documents

- ANSI/UL263, Standard for Fire Tests of Building Construction and Materials
- ASTM E84, Standard Test Method for Surface Burning Characteristics of Building Materials
- AC23, ICC-ES Acceptance Criteria for Sprayed Fire-resistant Materials (SFRMs), Intumescent Fire-resistant Coating and Mastic Fire-resistant Coatings Used to Protect Structural Steel Members

## 4. Uses

Firefilm III and Firefilm III C are thin film intumescent fire-resistive coating materials used for the protection of interior steel work up to and including 3 hours depending on the rating of the UL rated fire resistive assembly. Firefilm III C is intended for use in clean rooms and sterile environments. These products may be used with or without Type COLORCOAT top coat.

## 5. Production description

Types Firefilm III and Firefilm III C have been evaluated for use in various UL fire-resistance-rated assemblies in accordance with Section 703.2 of the 2024 IBC and 2022 CBC. These spray-applied intumescent coatings are of various thicknesses as specified in UL's Product iQ™ Online Directory under CDWZ.R20543.

In accordance with 2024 IBC and 2022 CBC Section 603.1, Exception No. 21, types Firefilm III and Firefilm III C may be installed in buildings of Type I or II construction. Additionally, the products described in this report meet a Class A interior finish materials as defined in IBC and CBC section 803.1.2.

## 6. Design

The intumescent fire-resistive coatings described in this report are intended for use in conditioned interior space purpose and interior general purpose conditions with and without Type COLORCOAT top coat. In addition to standardized environmental exposures, types Firefilm III and Firefilm III C were also evaluated when exposed to one percent carbon dioxide and one percent sulfur dioxide air mixtures, and chlorine at 5 ppm with Type COLORCOAT top coat.

## 7. Installation

### 7.1 General:

The intumescent fire-resistive coatings covered in this report must be installed in accordance with this report and the manufacturer's published installation instructions, which must be available to the applicators during installation at the jobsite.

## 7.2 Preparation of Substrate, Site and Surface Conditions

Prior to the application of material, the substrate to receive the intumescent coatings shall be free of any substances or conditions that interfere with adhesion of the materials as described in IBC section 704.12.3. Primers, paints and encapsulants are permitted provided they comply with IBC Sections 704.12.3.1 and 704.12.3.2.

In accordance with the manufacturer's installation instructions, environmental conditions must be a minimum of 50°F (10°C) or higher, a maximum relative humidity of 85%, and the surface temperature of the steel member to be treated must be 5°F (3°C) above the dew point.

Application of Firefilm III and Firefilm III C must be in a dry interior, controlled environment that is not subject to exterior weathering or freeze/thaw conditions. The materials shall be a minimum of 70°F (21°C) and a maximum of 100°F (38°C) prior to spraying. The materials must be sufficiently dry/cured prior to application of the topcoat.

## 7.3 Fire-Resistive Assemblies

The intumescent coating materials covered in this report shall be installed as specified in the UL Solutions Fire Resistive Designs shown under CDWZ.R20543 in UL's Product iQ™ Online Certifications Directory. Thicknesses of Types Firefilm III and Firefilm III C shall be as specified in the individual fire-resistive designs.

## 7.4 Thickness Tolerances

The minus tolerance of any individual intumescent coating thickness must be no less than 80% of the thickness specified in the applicable UL fire resistive designs. If needed, additional material must be applied to meet this tolerance.

If an individually measured intumescent coating thickness exceed the design thickness by 20% or more, the thickness shall be recorded as the design thickness plus 20%. The average thickness shall not exceed the maximum tested thickness specified in the UL fire resistive designs by more than 10%.

## 7.5 Special Inspections

Special inspections are required for intumescent fire-resistive materials in accordance with IBC section 1705.16.

## 8. Conditions of use

Types Firefilm III and Firefilm III C described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 2 of this report, subject to the following conditions:

- 8.1** Materials and methods of installation shall comply with this report and the manufacturer's published installation instructions. In the event of a conflict between the installation instructions and this report, this report governs.
- 8.2** All assemblies shall be built in accordance with the applicable published UL designs, or as otherwise described in this report.
- 8.3** See UL Solutions Online Certification Directory in UL's Product iQ™ under UL file R20543 for Mastic and Intumescent Coatings ([CDWZ](#)) evaluated as a part of fire-resistance-rated assemblies in accordance with ANSI/UL263 (ASTM E119).

- 8.4** The intumescent fire-resistive materials described in this report are manufactured by A/D Fire Protection Systems Inc. at the following locations under the UL Solutions Classification and Follow-Up Service Program, which includes audits in accordance with the quality elements of ICC-ES Acceptance Criteria for Quality Documentation, AC10.

US manufacturing locations:

Location	Plant ID
Lake Charles, LA	None
Dayton, NV	D

## 9. Supporting evidence

- 9.1** Manufacturer's descriptive product literature, including installation instructions.
- 9.2** Data in accordance with ICC-ES Acceptance Criteria for Sprayed Fire-Resistant Materials (SFRMs), Intumescent Fire-Resistant Coatings and Mastic Fire-Resistant Coatings Used to Protect Structural Steel Members (AC23) dated May 2016.
- 9.3** UL test reports and Classification under UL File R20543 in accordance with ANSI/UL 263. See UL Product Certification Category for Mastics and Intumescent Coatings ([CDWZ](#)).
- 9.4** Data in accordance with ICC-ES Acceptance Criteria for Quality Documentation (AC10) dated January 2019.

## 10. Identification

Types Firefilm III and Firefilm III C intumescent fire-resistive materials described in this evaluation report are identified by a marking bearing the report holder's name (A/D Fire Protection Systems Inc.), the plant identification, if applicable, the UL Classification Mark, and the evaluation report number UL ER25043-01. The validity of the evaluation report is contingent upon this identification appearing on the product or on the smallest unit container in which the product is packaged.

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