



ICC-ES Listing Report ESL-1371

Reissued October 2023

This listing is subject to renewal in October 2024.

CSI: DIVISION: 07 00 00 – THERMAL AND MOISTURE PROTECTION
Section: 07 81 23 – Intumescent Fire Protection

DIVISION: 09 00 00 – FINISHES
Section: 09 96 00 – High-Performance Coatings
Section: 09 96 43 – Fire-Retardant Coatings
Section: 09 96 46 – Intumescent Painting

Product Certification System:

The ICC-ES product-certification system includes evaluating reports of tests of standard manufactured product, prepared by accredited testing laboratories and provided by the listee, to verify compliance with applicable codes and standards. The system also involves factory inspections, and assessment and surveillance of the listee's quality system.

Products: FIREFREE 88® (FF88®) INTUMESCENT COATING

Listee: FIREFREE COATINGS, INC.

Evaluation: The FireFree 88® (FF88®) intumescent coating is a water-based latex non-toxic coating, where the application is either brushed, rolled or sprayed using an airless spray gun. The coating was evaluated when applied as a component of the assembly and tested in accordance with the following standard:

- ASTM E3048, Standard Test Method for Determination of Time to Burn-Through Using the Intermediate Scale Calorimeter (ICAL) Radiant Panel, ASTM International.

Assembly: **ALUMINUM COMPOSITE PANEL:** The aluminum composite panel's nominal overall thickness is 0.283 inch (7.2 mm), where each panel is constructed of the following (See Figure 1: Items 1 through 4):

1. **Aluminum Retrofit Panel:** Minimum 0.032-inch-thick (0.81 mm) 3003 H14 aluminum alloy sheet, measuring 43 inches wide by 43 inches tall (1092 mm by 1092 mm). The retrofit panel is placed over the Existing Cladding Panel (Item 4) with a 1/8-inch-thick (3.18 mm) gap and secured together by Adhesive Bonding Tape (item 3).
2. **FireFree 88® intumescent coating:** Coating is applied to the exterior surface of the Existing Cladding Panel (Item 4), where the surface is coated at a minimum dry film thickness of 40 mils (1.01 mm).
3. **Adhesive Bonding Tape – Adhesive Tape Products, Ltd. - FA-UHB 120W:** Minimum 0.118-inch-thick (3.00 mm) 3/4-inch-wide (19 mm), double-faced foamed acrylic adhesive tape securing the Aluminum Retrofit Panel (Item 1) and Existing Cladding Panel (Item 4) together at all four sides.
4. **Existing Cladding Panel:** Nominal overall thickness of 0.126-inch (3.21 mm), consisting of two 3003 H14 aluminum alloy sheets with a minimum thickness of 0.032-inch (0.81 mm), measuring 43-inches-wide-by-43-inches-tall (1092 mm by 1092 mm) and separated with an inner core of 1/16-inch-thick (1.59 mm) polyurethane foam.

Findings: The FireFree 88® (FF88®) intumescent coating, when applied as a component of the assembly described in the Assembly section above, and tested in accordance with ASTM E3048, there was no ignition, therefore, there was no Time to Ignition, no Time to Burn-Through, and no Time to Sustained Flaming on the Unexposed Side. These findings are based on the temperatures measured as specified in Table 1 for the assembly shown in Figure 1.

Identification:

1. Containers of FireFree 88® (FF88®) intumescent coating are identified by a label bearing the manufacturer's name (FireFree Coatings, Inc.) and address, the product name, the date of manufacture, shelf life, the manufacturer's instructions for application, the listing report number (ESL-1371), and when applicable, the ICC-ES Listing Mark.
2. The report holder's contact information is the following:

FIREFREE COATINGS, INC.
8 COMMERCIAL BOULEVARD, SUITE E
NOVATO, CALIFORNIA 94949
(415) 459-6488
www.firefree.com

Installation: The product must be installed in accordance with the FireFree Coatings, Inc. published installation instructions.

Conditions of listing:

1. The listing report addresses only conformance with the standard noted above.
2. Approval of the product's use is the sole responsibility of the local code official.
3. The listing report applies only to the products tested and as submitted for review by ICC-ES.
4. The FireFree88® (FF88®) intumescent coating, described in this listing report, is produced under a quality control program with inspections by ICC-ES.

TABLE 1—MEASURED TEMPERATURES^{1,4}

SPECIMEN¹	FIREFREE88® COATING SURFACE TEMPERATURES	TEMPERATURES BETWEEN RETROFIT PANEL AND EXISTING CLADDING PANEL	UNEXPOSED SURFACE TEMPERATURES OF EXISTING CLADDING PANEL
CONTROL ASSEMBLY (WITHOUT FIREFREE 88® COATING)	N/A	220°C ²	150°C
ASSEMBLY WITH FIREFREE 88® COATING	230°C	180°C ³	130°C

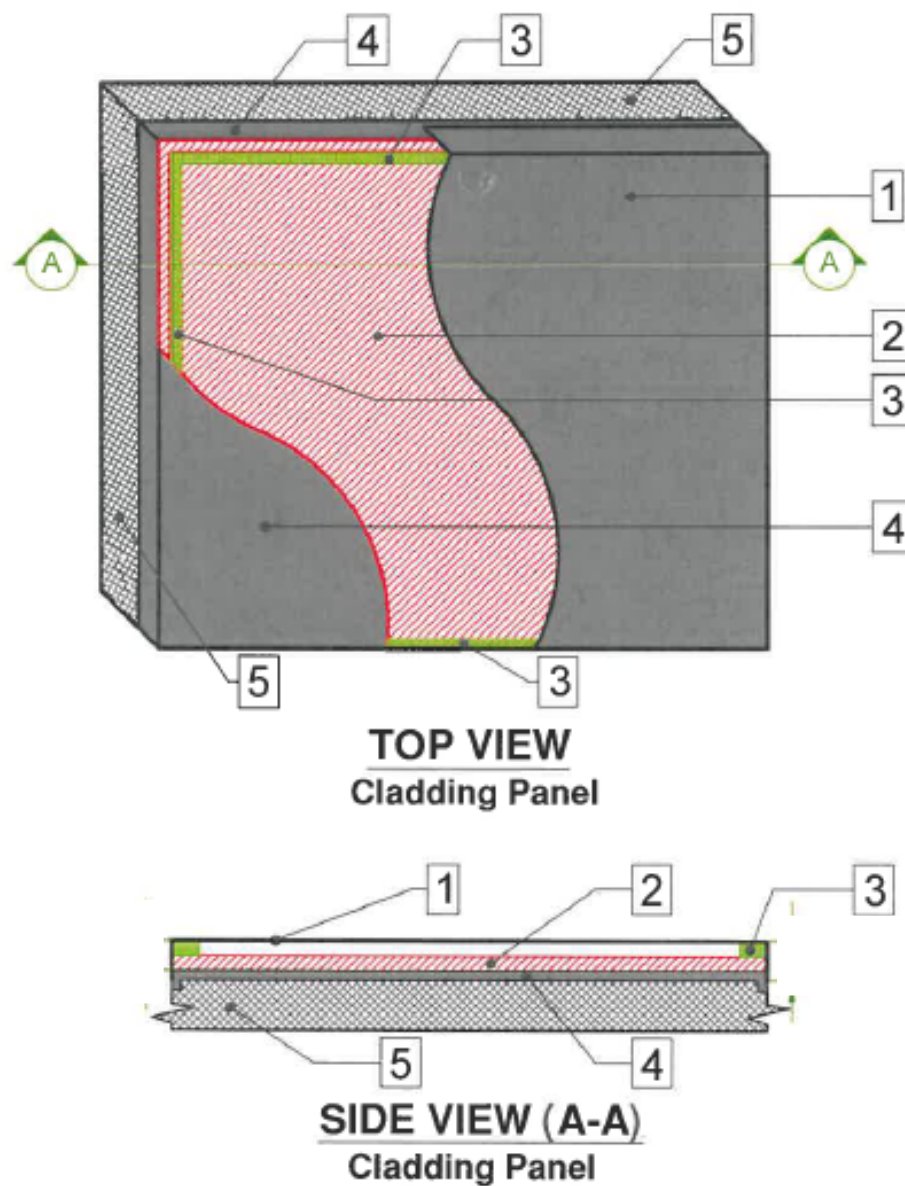
For US: 1°C = 33.8°F

¹Each overall test assembly size was 43-inches-wide-by-43-inches-tall (1092 mm by 1092 mm) and placed into a frame allowing a 39.37 inches by 39.37 inches (1 m by 1 m) surface to be exposed to the radiant panel.

²Temperature reached equilibrium after 15 minutes; test terminated at 25 minutes after overall temperature equilibrium was reached.

³Temperature reached equilibrium after 25 minutes; test terminated at 60 minutes after overall temperature equilibrium was reached.

⁴Since there was no ignition, there was no Time to Ignition, no Time to Burn-Through, and no Time to Sustain Flaming on the Unexposed Side.



LEGEND KEY	
1	Aluminum Retrofit Panel
2	FireFree 88® Intumescent Coating
3	ADHESIVE BONDING TAPE – Typ. all 4 sides
4	Existing Cladding Panel
5	Existing Building Structure

FIGURE 1—TYPICAL CROSS-SECTION OF ASSEMBLY