



CAFCO SprayFilm®

Intumescent Coatings

Taking building design and steel fire protection to new levels!

CAFCO SprayFilm® -WB 2, WB 3, and WB 4 are water-based intumescent coatings for the fire protection of structural steel. SprayFilm -WB 2 and WB 3 are ideally suited for exposed interior steel applications and in retrofit applications where the surrounding areas remain occupied. CAFCO SprayFilm -WB 4 combined with CAFCO SprayFilm -Topseal is a water-based system investigated by UL for exterior applications. The CAFCO SprayFilm products are odorless and low VOC coatings that comply with governmental health and safety regulations.

The application of CAFCO SprayFilm® will cause little, if any, disruption to surrounding trades or office personnel. CAFCO SprayFilm Thin Film Intumescent Systems give architects the ability to design using steel that can be decorative and aesthetically pleasing. Structural steel no longer needs to be hidden behind ceilings and gypsum board. The SprayFilm coatings can be top coated to match their surroundings, and allow steel to be left exposed to view while providing the required fire resistance rating.

SprayFilm can be used on exposed steel where smooth, durable, and decorative fire protection is required.

Physical Performance				
Standard Performance				
Characteristic	ASTM Method	WB 2	WB 3	WB 4
Surface Burning	E84	Class A	Class A	Class A
Durometer Hardness	D2240	84 Minimum Shore D	84 Minimum Shore D	84 Minimum Shore D
Impact Resistance	D2794	26 inch-lb (0.30 kg-m) Intrusion Minimum	56 inch-lb (0.65 kg-m) Intrusion Minimum	56 inch-lb (0.65 kg-m) Intrusion Minimum
Abrasion Resistance	D4060	0.7411 g/1000 cycles	0.6505 g/1000 cycles	0.2300 g/1000 cycles

Hourly Rating

COLUMNS	W/D	Metric	M/D	1	1-1/2	2	3	4	UL DESIGNS	ULC DESIGNS
W8x10	0.33	(W200x15)	18	•					X649	Z618
W6x12	0.44	(W150x18)	26	•	•	•			X649	Z618
W6x16	0.58	(W150x24)	34	•	•	•	•		X649	Z618
W10x49	0.84	(W250x73)	49	•	•	•	•		X649	X647* Z618 Z613*
W12x120	1.64	(W310x179)	95	•	•	•	•		X649	X647* Z618 Z613*
W14x283	3.00	(W360x421)	176	•	•	•	•	•	X649	X647* Z618 Z613*
COLUMNS	A/P		M/D	1	1-1/2	2	3	4	UL DESIGNS	ULC DESIGNS
HSS3.5x3.5x3/16	0.18	(HSS89x89x4.8)	34	•					X650	Z619
HSS5x3x1/4	0.23	(HSS127x76x6.4)	45	•	•	•			X650	Z619
HSS5x3x5/16	0.29	(HSS127x6x8)	54	•	•	•			X650	Z619
HSS8x8x1/2	0.47	(HSS203x203x13)	89	•	•	•	•		X650	X648* Z619 Z614*
SP4x0.313	0.29	(SP102x8.0)	58	•					X650	Z619
SP8x0.500	0.47	(SP219x12.7)	94	•	•	•			X650	Z619
SP8x0.875	0.79	(SP219x22.0)	157	•	•	•			X650	Z619
BEAMS	W/D		M/D	1	1-1/2	2	3	4	UL DESIGNS	ULC DESIGNS
W6x12	0.52	(W150x18)	31	•					N613	0603
W8x24	0.70	(W200x36)	41	•	•	•			N614	0606
W8x28	0.81	(W200x42)	48	•	•	•			N614	0606
UNPROTECTED FLOOR/CEILING ASSEMBLIES	W/D		M/D	1	1-1/2	2	3	4	UL DESIGNS	ULC DESIGNS
W6x12	0.52	(W150x18)	31	•	•	•				F908
W8x24	0.70	(W200x36)	41	•	•	•	•		D902	
W8x28	0.81	(W200x42)	48	•	•	•	•		D902	

*1 hour only

** ULC designs may not reflect all UL updates

Refer to specific design for product information. For additional technical information please contact Isolotek at 800-631-9600.

CAFCO SprayFilm® Guide Specification

Section 07812—Intumescent Fire Resistive Material

Following is an outline/short language specification. Complete specifications for the SprayFilm Systems are available on various media upon request.

PART 1—GENERAL

1.1 SCOPE

- 1.1.1 This specification covers labor, materials, equipment, and application necessary for, and incidental to, the complete and proper installation of intumescent fire protection for application to steel structures and supports in accordance with all applicable requirements of contract documents.
- 1.1.2 This specification shall be supplemented by the applicable requirements of building codes, insurance rating organizations and all other authorities having jurisdiction.

1.2 SECTION INCLUDES

- 1.2.1 Intumescent fire protection material.
- 1.2.2 Top-coat protective decorative finish.

1.3 RELATED SECTIONS

- 1.3.1 Section 05100: Structural Steel.
- 1.3.2 Section 05120—05500: Structural steel and metal fabrications with reference to primer receiving fire protection materials.
- 1.3.3 Section 07811: Spray-Applied Fire Resistive Material.
- 1.3.4 Section 07270: Firestopping and Smoke Seals.
- 1.3.5 Section 09900: Painting.

1.4 REFERENCES

- 1.4.1 Underwriters Laboratories Inc. (UL) Fire Resistance Directory.
- 1.4.2 ULC—List of Equipment and Materials.
- 1.4.3 ICC Evaluation Services - ES Report (ESR-1092)
- 1.4.4 Test Standards
 - A. UL 263 (ASTM E119)—Fire Tests of Building Construction and Materials.
 - B. CAN/ULC-S101—Standard Methods of Fire Endurance Tests of Building Construction and Materials.
 - C. ASTM E84 (UL 723, CAN/ULC-S102)—Surface Burning Characteristics of Building Materials. Class A Rating Required; Flame Spread Maximum: 10 and Smoke Developed Maximum: 50.
 - D. ASTM D2240 —Durometer Hardness (Shore D Only). Minimum: 84 Shore D.
 - E. ASTM D2794 —Impact Resistance. Intrusion minimum: 26 inch-lb. (0.65 kg-m).
 - F. ASTM D4060 —Abrasion Resistance. Maximum: 0.7411 grams/1000 cycles.
 - G. ASTM D4541 —Bond Strength. Minimum: 165 psi. (1138 k Pa.)
- 1.4.5 Steel Structures Painting Council (SSPC) Surface Preparation Standards.
- 1.4.6 Material manufacturer's current published information.
- 1.4.7 AWC Technical Manual 12-B "Standard Practice for the Testing and Inspection of Field Applied Thin-Film Intumescent Fire-Resistive Materials; an Annotated Guide", Second Edition.

1.5 SYSTEM DESCRIPTION

- 1.5.1 The intumescent fire protection materials shall be applied at the required thickness to provide the UL fire resistive ratings.

1.6 SUBMITTALS

- 1.6.1 Manufacturer's Data: Submit manufacturer's specifications, including certification as may be required to show material compliance with contract documents.

1.7 QUALITY ASSURANCE

- 1.7.1 Manufacturer—Company specializing in manufacturing fire protection products.
- 1.7.2 The intumescent fire resistive material shall be manufactured under the Follow-Up Service program of UL or ULC and bear the UL and/or ULC label (mark).
- 1.7.3 Applicator—A firm with expertise in the installation of fire resistive or similar materials. This firm shall be licensed and approved by the fire resistive material supplier.
- 1.7.4 Product—The product shall be approved by the architect and applicable authorities having jurisdiction.

1.8 DELIVERY, STORAGE AND HANDLING

- 1.8.1 Deliver materials to the project in manufacturer's unopened packages, fully identified as to trade name, type and other identifying data. Packaged materials shall bear the appropriate labels, seals and UL label (mark) for fire resistive ratings and shall be stored at temperatures between 50°F (10°C) and 100°F (38°C), in a dry interior location away from direct sunlight. **DO NOT FREEZE.**

1.9 PROJECT/SITE CONDITIONS

- 1.9.1 When the temperature at the job site is less than 50°F (10°C), a minimum substrate and ambient temperature of 50°F (10°C) shall be maintained prior to, during and a minimum of 72 hours after application. If necessary for job schedule, the General Contractor shall provide enclosures and heat to maintain proper temperatures and humidity levels in the application areas.

- 1.9.2 In enclosed areas, ventilation shall not be less than 4 complete air exchanges per hour.
- 1.9.3 Relative humidity shall not exceed 75% throughout the total period of application and drying for the intumescent fire resistive material, and must not exceed 75% throughout the application and drying for the protective decorative top-coat.

1.10 SEQUENCING AND SCHEDULING

- 1.10.1 Applicator shall cooperate in the coordination and scheduling of fire protection work to avoid delays in job progress.
- 1.10.2 The installation of piping, ducts, conduit or other suspended equipment shall not commence until the application of the thin-film fire resistive material is complete in that area.

PART 2—PRODUCTS

2.1 COMPATIBLE METAL PRIMER

- 2.1.1 Primer shall be approved by manufacturer and applied in full accordance with the primer manufacturer's written instructions.

2.2 INTUMESCENT FIRE PROTECTION SYSTEM

- 2.2.1 The intumescent fire resistive material shall be CAFCO SprayFilm - WB 2, -WB 3 or -WB 4 as supplied by Isolatak International or Cafco Industries.
- 2.2.2 Intumescent fire resistive material shall be applied in accordance with drawings and/or specifications, and shall have been tested in accordance with the procedures of UL 263 or ASTM E119 or CAN/ULC-S101, and reported by Underwriters Laboratories, Inc. or Underwriters Laboratories of Canada only.

2.3 DECORATIVE TOP-COATING

- 2.3.1 Top-coat materials shall be as required for color-coding, aesthetics or additional surface protection, and approved by the thin-film fire resistive material manufacturer.
- 2.3.2 For exterior applications with WB4, CAFCO SprayFilm - Topseal must be applied over WB 4 per the specified UL design listings.
- 2.3.3 For exterior applications over SprayFilm - Topseal, exterior finish coat materials are required for color-coding, aesthetics or additional surface protection, and approved by the thin-film fire resistive material manufacturer.

PART 3—EXECUTION

3.1 PREPARATION

- 3.1.1 All surfaces to receive thin-film fire resistive material shall be clean, dry, and free of oil, grease, loose mill scale, dirt, dust or other materials which would impair bond of the thin-film fire resistive material to the surface. Any cleaning of the surfaces to receive fire resistive material shall be the responsibility of the General Contractor or steel erector, as outlined in the structural steel section.
- 3.1.2 Confirm compatibility of surfaces to receive thin-film fire resistive material. Steel surfaces shall be primed with a compatible primer recommended by the thin-film fire resistive material manufacturer.
- 3.1.3 Provide masking, drop cloths or other suitable coverings to prevent overspray onto surfaces not intended to be coated with intumescent coating.

3.2 APPLICATION

- 3.2.1 The thin-film fire resistive material shall be applied at the required dry film thickness per the appropriate UL Design No.

3.3 MOCK UP

- 3.3.1 Before proceeding with the work, the applicator shall apply the thin-film fire resistive material to a section witnessed by the architect's or owner's representative. The application shall be subject to their approval and shall be used as a guide for texture and thickness of the finished work.

3.4 CLEAN UP AND REPAIR

- 3.4.1 Upon completion of installation, all excess material, overspray and debris shall be cleared and removed from the job site.
- 3.4.2 All patching of and repair to thin-film fire resistive material, due to damage by other trades, shall be performed under this section and paid for by the trade responsible for the damage. Patching shall be performed by applicators licensed or otherwise approved by material manufacturer.

3.5 INSPECTION AND TESTING

- 3.5.1 In addition to continuous Wet Film Thickness checks performed by applicator during application, the installed intumescent material shall be inspected by a qualified independent testing laboratory for thickness in accordance with the AWC Technical Manual 12-B "Standard Practice for the Testing and Inspection of Field Applied Thin-Film Intumescent Fire-Resistive Materials; an Annotated Guide", Second Edition, before application of the top-coat.
- 3.5.2 The results of the above tests shall be made available to all parties at the completion of each area and approved prior to the application of top-coat.

For Further Information

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For Further Information CAFCO® Technical and Sales Representatives are always available to lend assistance. Additional printed materials, including Material Safety Data Sheets, and other product literature, are available upon request. For more information about our CAFCO® line of sprayed fire protection, thermal and acoustical treatments, SprayFilm® Intumescent Coatings, and CAFCO-BOARD™ or for the name of the Sales Representative in your area, please contact:

In the United States: Isolatak International, Stanhope, New Jersey Tel: 800.631.9600 Fax: 973.347.9170

In Mexico & Central America: Cafco Mexico S.A. de C.V., Mexico D.F. Tel: 525.254.6683 Fax: 525.531.7826

In Andean Countries: Cafco Andina S.A., Santiago, Chile Tel: 562.754.1394 Fax: 562.754.1393

In Canada: Cafco Industries, Toronto (Ontario) Tel: 888.873.0003 Fax: 416.679.2933

For more detailed product information, visit our website at

www.cafco.com or contact us at cafco@isolatak.com

The performance data herein reflect our expectations based on tests conducted in accordance with recognized standard methods under controlled conditions. The sale of these products shall be subject to the Terms and Conditions of Sale set forth in the Company's invoices. Isolatak International is not responsible for property damage, bodily injuries, consequential damages or losses of any kind that arise from or are related to the applicator's, general contractor's, or property owner's failure to follow the recommendations set forth in Isolatak International's publications. No agent, employee or representative of the Company, its subsidiary or affiliated companies, is authorized to modify this statement.

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Total Passive
Fire Protection



PRODUCT DATA SHEET

CAFCO SprayFilm® -WB 2, WB 3, WB 4 INTUMESCENT FIRE PROTECTION

1. PRODUCT DESCRIPTION

CAFCO SprayFilm® -WB 2, WB 3, and WB 4 are water-based, intumescent coatings consisting of polyvinyl acetate resins and inorganic fillers for the fire protection of structural steel. CAFCO SprayFilm -WB 4, in conjunction with CAFCO SprayFilm -Topseal, is a water-based system investigated by UL for exterior applications. CAFCO SprayFilm gives architects the ability to design using steel that can be decorative and aesthetically pleasing. These coatings can be top coated to match to their surroundings and allow steel to be left exposed to view while providing the fire resistance rating.

The first step of the CAFCO SprayFilm intumescent coating system is the application of a compatible steel primer. Next, the CAFCO SprayFilm is applied to the steel over the primer, to the required thickness. This layer provides the actual fire protection to the member. Finally, a protective topcoat is applied over the CAFCO SprayFilm. For exterior use, SprayFilm -WB 4 must be sealed with SprayFilm -Topseal. An approved exterior finish coat is then applied directly over the SprayFilm -Topseal. The finish coat can be any color, and will protect the CAFCO SprayFilm against humidity, chemicals and damage, while providing a smooth, attractive, architectural finish.

2. FEATURES

- Provides up to 4 hour fire resistance ratings
- Easy application and clean up
- Can be finished with any color top coat
- VOC compliant
- Abuse resistant
- Durable and smooth architectural finish

3. APPLICATION

Before applying CAFCO SprayFilm to structural steel, an approved primer must be applied. The CAFCO SprayFilm -WB 2 system can be brushed, rolled or spray-applied with airless paint equipment. The CAFCO SprayFilm -WB 3 and WB4 system can be brushed or sprayed, not rolled. CAFCO SprayFilm -WB 3 is available in a trowel grade material. The thickness of CAFCO SprayFilm will depend upon the specified fire rating and size/shape of the steel member to be protected. For exterior use, SprayFilm -WB 4 must be sealed with SprayFilm -Topseal. An additional finish coat is then applied, in the desired color, directly over the SprayFilm -Topseal.

4. FIRE RESISTANCE RATINGS

CAFCO SprayFilm is classified by Underwriters Laboratories, Inc. to provide up to 4-hour fire resistance ratings in accordance with UL 263 (ASTM E-119), CAN/ULC-S101 and ISO 830.

In the United States: Isolatak International, Stanhope, New Jersey Tel: 800.631.9600 Fax: 973.347.9170

In Mexico & Central America: Cafco Mexico S.A. de C.V., Mexico D.F. Tel: 52.55.5254.6683 Fax: 52.55.5531.7826

In Andean Countries: Cafco Andina S.A., Santiago, Chile Tel: 562.754.1394 Fax: 562.754.1393

In Canada: Cafco Industries, Toronto (Ontario) Tel: 888.873.0003 Fax: 416.679.2933

5. PHYSICAL PERFORMANCE

Structural steel fire protection is exposed to various physical forces throughout the life of a building. It is important for a fire protection material to be able to withstand abuse. American Society for Testing and Materials (ASTM) test methods are used to evaluate the performance of intumescent materials when subject to these various physical forces.

STANDARD PERFORMANCE				
Performance Characteristic	ASTM Standard	CAFCO SprayFilm® Performance *		
		WB 2	WB 3	WB 4
<u>SURFACE BURNING</u> Measures the response of material to heat and flame under controlled conditions.	E84	Flame Spread 0-10 Smoke 0-50 Developed (Class A)	Flame Spread 0-10 Smoke 0-50 Developed (Class A)	Flame Spread 0 Smoke 0-5 Developed (Class A)
<u>DUROMETER HARDNESS</u> Measures the indentation hardness of materials.	D2240	84 minimum Shore D	84 minimum Shore D	84 minimum Shore D
<u>IMPACT RESISTANCE</u> Measures the point at which a coating will crack when impacted.	D2794	26 inch-lb. (0.30 kg-m) Intrusion minimum	56 inch-lb. (0.65 kg-m) Intrusion minimum	56 inch-lb. (0.65 kg-m) Intrusion minimum
<u>ABRASION RESISTANCE</u> Measures the abrasion produced on organic coatings applied to a plain, rigid surface.	D4060	0.7411 g/ 1000 cycles	0.6505 g/ 1000 cycles	0.2300 g/ 1000 cycles
<u>BOND STRENGTH</u> Evaluates the adhesion of a coating to its substrate when subjected to tensile stress.	D4541	165 psi (1138 k Pa)	280 psi (1931 k Pa)	280 psi (1931 k Pa)

* Values represent independent laboratory tests under controlled conditions

The performance data herein reflect our expectations based on tests conducted in accordance with recognized standard methods under controlled conditions. The sale of these products shall be subject to the Terms and Conditions of Sale set forth in the Company's invoices. Isolatak International is not responsible for property damage, bodily injuries, consequential damages or losses of any kind that arise from or are related to the applicator's, general contractor's, or property owner's failure to follow the recommendations set forth in Isolatak International's publications. No agent, employee or representative of the Company, its subsidiary or affiliated companies is authorized to modify this statement.