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FROM FAX NO. 860-828-3297

DEST. FAX NO. _____

NO. OF PAGES 1
(including this one)

DATE: 12-21-10

TO: Kevin Gough, Architect

COMPANY: Archetype, P.A.

FROM: Daryl A. Orlich

DEPT: _____

RE: Albi Clad Thin Film Interior Intumescent Fireproofing Specification, 795 Congress Street, Portland, Me, 1 hr. HSS Column & Beam Members., X-638 & X-625

Mr. Gough

The HSS members will be based on Underwriters Laboratory Inc. column design X-638 the 1 hr. thickness in this design requires 119 mils DFT Albi Clad Thin Film on a HSS member with a 3/8" wall the 1/4' wall HSS member to be protected on this project is calculated to require 160 mils DFT in accordance with X-638 and the 1 hr. rating.

The horizontal beam since it will have fireproofing on all four sides will require 100 mils DFT based on a 8 X 24 wide flange column and U L I X-625 the attached letter from U L I confirms horizontal members with four sided protection to be treated as a column.

Please do not hesitate to let me know should you need additional information, I look forward to working with you.

Kind Regards
Daryl A. Orlich
V.P. Sales
Albi Fireproofing
Mob # 860-985-3138

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BXUV.X638
Fire Resistance Ratings - ANSI/UL 263

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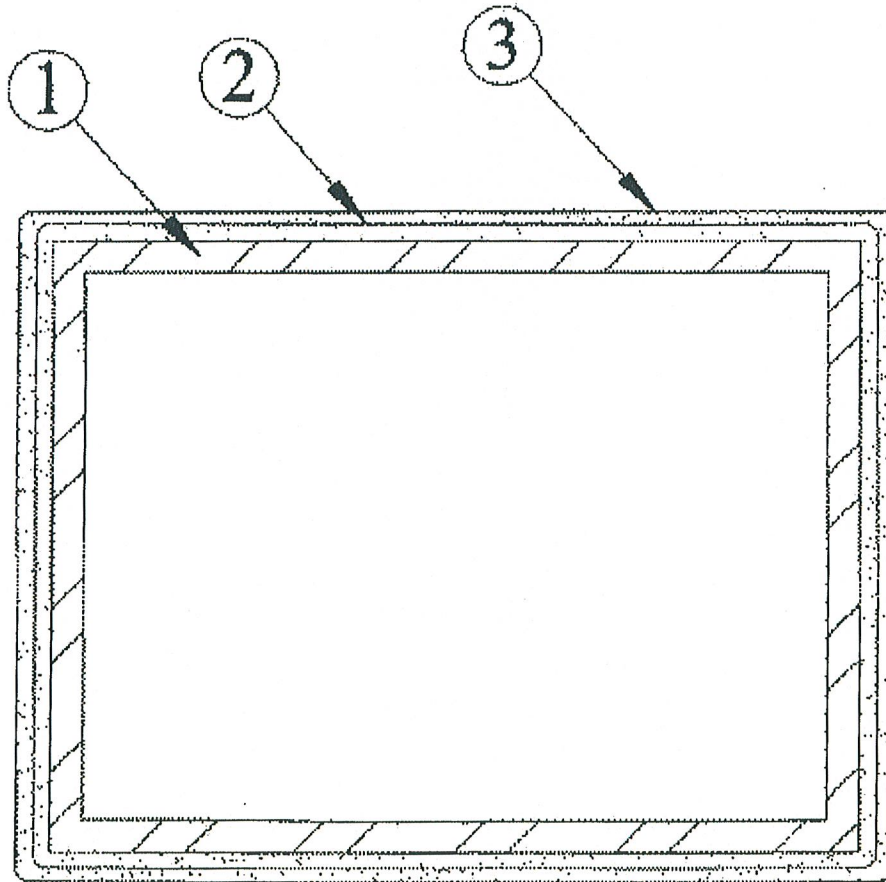
Fire Resistance Ratings - ANSI/UL 263

Guide Information

Design No. X638

June 16, 2003

Rating-1 and 2 Hr



Design No. X638**Rating-1 and 2 Hr**

1. **Steel Column** — Steel tube columns with the minimum sizes shown in the tables below. Columns shall be free of dirt, loose scale and oil and primed with a red oxide primer.

2. **Reinforcing Mesh** — When total coating thickness exceeds 0.130 in. Glass fiber mesh, 3/16 by 3/16 in. square pattern weighing 147 g per sq m. Glass fiber mesh to be applied at mid depth of the coating.

3. **Mastic coating** — Coating spray applied directly from containers to desired thickness. See table below for appropriate final dry thickness. After each coat, the surface shall be lightly rolled with a paint roller.

Hourly Rating - 1 HR		Thickness Required
Size	A/P	
8x8x3/8	0.36	0.119
10x10x5/8	0.60	0.065
16x16x1/2	0.48	0.065
16x16x5/8	0.60	0.065

Hourly Rating - 2 HR		Thickness Required
Size	A/P	
4x4x3/8	0.34	0.431
8x8x1/2	0.47	0.334
10x10x5/8	0.60	0.265
16x16x1/2	0.48	0.334
16x16x5/8	0.60	0.265

**ALBI MFG, DIV OF
STANCHEM INC** — Types ACTF, CITEX TF.

Investigated for Interior General Purpose only.

*Bearing the UL Classification Mark



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BXUV.X625

Fire Resistance Ratings - ANSI/UL 263

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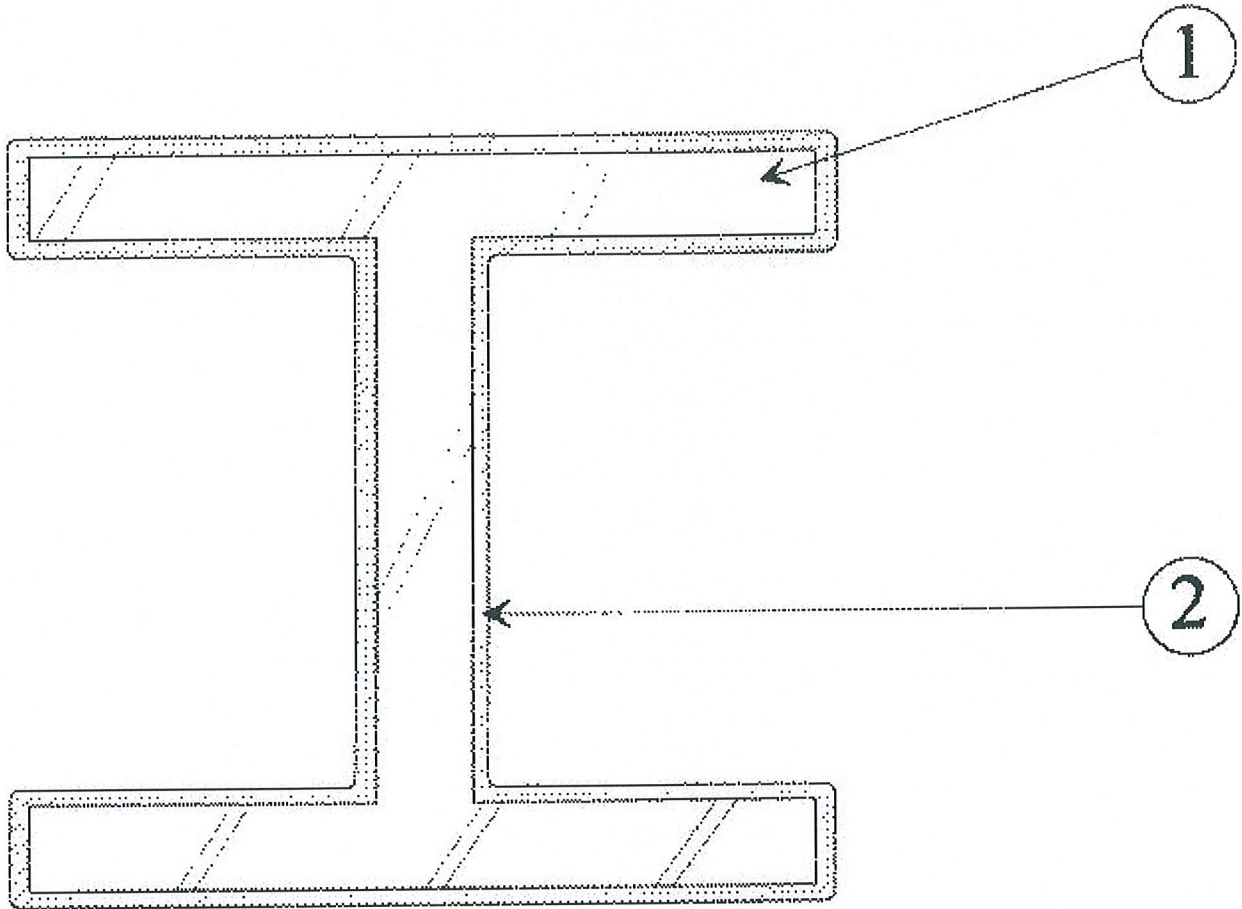
Fire Resistance Ratings - ANSI/UL 263

[See General Information for Fire Resistance Ratings - ANSI/UL 263](#)

Design No. X625

August 15, 2000

Ratings — 1, 1-1/2, 2, 2-1/2, 3 and 3-1/2



1. **Steel Column** — Min size shown in table below. The column surfaces shall be free of dirt, loose scale and oil. Steel surfaces to be primed with a red oxide primer as required per manufacturer's application instructions.

2. **Mastic Coating*** — Coating spray applied directly from containers to desired thickness. See table below for appropriate final dry thickness. After each coat, the surface shall be lightly rolled with a paint roller.

Size	Rating (hr)	Min. Thickness(in.)
W8x24	2	0.313
W10x49	1	0.055
W10x49	1-1/2	0.132
W10x49	2	0.310
W10x49	2-1/2	0.430
W10x49	3	0.550
W10x49	3-1/2	0.670
W12x120	1-1/2	0.108

ALBI MFG, DIV OF STANCHEM INC — Types AC900, AC900 NEW, ACTF, CITEX TF , Investigated for Interior General Purpose only.

3. Flange Edge Reinforcement — (Not Shown) — Glass fiber mesh, 3/16 by 3/16 in. square pattern, weighing 147 g/m sq. Glass fiber mesh must be applied for the 3 and 3-1/2 h ratings.

3A. As an alternate to Item 3, — Glass Fiber Gauze-Nom 10 in. wide, 6.8 grams/ft embedded in mastic coating around flange tips and applied to the entire length of the column.

*Bearing the UL Classification Mark

[Last Updated](#) on 2000-08-15

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Underwriters Laboratories Inc.®

June 9, 1994

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Albi Manufacturing
Division of StanChem, Inc.
Mr. W. Casey West
41 Berlin Street
East Berlin, CT 06023

Our Reference: File R4443, Project 94NK15326

Subject: Protection Requirements For Beams

Dear Mr. West:

This is in response to our telephone conversation of June 2, 1994 concerning the above referenced subject.

It is our understanding that you have a situation in which a beam needs to be protected on all four sides. Underwriters Laboratories Inc. usually tests beams which support steel floor and form units or concrete slabs. The voids formed between the deck and the upper flange are filled with the spray applied protection material. In situations where the upper flange is not supporting a deck or concrete slab, it is the position of Underwriters Laboratories Inc. that the use of the thicknesses required on columns for the same hourly rating would provide the restrained and unrestrained beam ratings.

We trust the above answers your inquiry. However, if you should have any additional questions, please feel free to contact the writer.

Very truly yours,

Joseph A. Treadway
JOSEPH A. TREADWAY (X43325)
Project Engineer
Engineering Services, Dept 411

Reviewed by:

Daniel J. Kaiser
DANIEL J. KAISER
Engineering Group Leader
Engineering Services, Dept 411

JAT:lem
WP51\LTR\R4443.JUN
C9639



Att:
Bill Web

August 29, 2001

ALBI Manufacturing
Mr. Mohammed Hussain
401 Berlin Street
East Berlin, CT 06023

Our Reference: R4443, 00NK32316
Subject: Results of Column Testing

Dear Mr. Hussain:

We have conducted multiple tests in accordance the Standard "Fire Tests of Building Construction and Materials," ANSI/UL 263 (ASTM E119, NFPA No. 251) on wide flange steel columns protected with the mastic and intumescent coating Type ACTF.

This following is a summary of the analysis of the fire tests conducted on the steel columns:

Wide Flange Column Size	Hourly Rating	Dry Film Thickness (in.)
W8x24	1 hr	0.100
W12x120	1 hr	0.037

The mastic and intumescent coating thickness specified in the table above shall be considered the minimum average thickness of the individual thickness readings measured in accordance with Technical Manual 12-B, "Standard Practice of the Testing and Inspection of Field Applied Thin-Film Intumescent Fire Resistive Materials; an Annotated Guide."

The mastic and intumescent coating average thickness shall not exceed 0.430 in. and no individual thickness measurement shall be less than 80 percent of the thickness specified in the table above.

We will be revising Design No. X625 to include the above. It is understood that all other requirements of Design No. X625 shall be met.



Albi Clad TF is a water-base intumescent thin film fireproofing material for use wherever interior fireproofing will be exposed to view or be subject to potential damage from external sources. This hard, durable, abrasion resistant product has a smooth, aesthetic finish. Albi Clad

TF is ideal for application in occupied areas or other locations where solvent-base fireproofing materials cannot be used. Because of its water-base formulation Albi Clad TF is fully compliant with EPA VOC limits and regulations.

RECOMMENDED USES:

Albi Clad TF is recommended for interior use on structural steel columns and beams in areas such as:

- Industrial plants
- Atriums
- Hospitals
- Parking Garages
- Food Processing Plants
- Convention Centers
- Correctional Facilities
- Power Generating Facilities
- Warehouses
- School Gymnasiums
- Computer Chip Manufacturing
- Sports Stadiums

FEATURES:

- Factory formulated, single component.
- UL tested for resistance to high humidity, heat aging, CO₂/SO₂ industrial atmosphere, chlorine and washing.
- Thin film application.
- Lightweight & hammer-hard.
- UL listed for 1 through 3-1/2 hours to ASTM E-119.
- Water-based.
- Attractive off-white finish.
- 100% Asbestos Free.
- Will not dust, flake, nor delaminate.

APPLICATION:

Albi Clad TF is spray applied directly from the shipping container. It is important to specify metal primers that are compatible with Albi Clad TF. For application sites subjected to chemical fumes or spills, the use of a topcoat is required. Contact Albi Manufacturing for recommended primers and topcoats. Do not apply Albi Clad TF below 50 degrees F. Care must be taken to protect the material from direct rainfall. Please refer to the Albi Clad TF

Fireproofing Application Manual and Field Guide for further details. Thickness of the application will depend upon the fire endurance rating specified. Albi Clad TF must be applied by qualified, factory-trained applicators, utilizing standard, heavy-duty, pneumatic or airless, spray equipment. Installation must be in accordance with manufacturer's printed instructions, and in compliance with specific test requirements.

PHYSICAL PROPERTIES:

PROPERTY	TEST METHOD	VALUE
Dry Applied Density		85 PCF
Hardness	Shore D	45-50
Compressive Strength	ASTM D695-91	300 psi
Bond Strength	ASTM D952-90	40 psi
Abrasion Resistance	ASTM D1044-90	0 grams loss
Impact	ASTM D256-90b	0.77-ft lbs./inch of notch
Weight per Gallon		11.90 ± 0.20 lbs./gals
% Solids by Weight		70% ± 2.0%
Flame Spread	ASTM E 84	2 - Class A
Smoke Developed	ASTM E 84	5 - Class A

WARRANTY

LIMITED WARRANTY/LIMITATION OF LIABILITY: Seller warrants that its products will meet the specifications which it sets for them. Seller's responsibility under this warranty will be limited solely to replacing the products which prove defective, provided that Buyer gives Seller prompt notice in writing of said defect and satisfactory proof thereof. Products may be returned to Seller only after written authorization has been obtained from Seller. The foregoing warranty is in lieu of all other warranties, whether oral, written, express, implied or statutory. IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WILL NOT APPLY. Technical or other advice is furnished by us solely as an accommodation and shall not increase the scope of our responsibilities or liability. Seller's warranty obligations and Buyer's remedies hereunder are solely and exclusively as stated herein. In no event will Seller be liable either for the labor and other associated costs incurred in replacing the product, including, but not limited to, its removal and application, or for other incidental or consequential damages.



Albi

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ALBI CLAD TF
(Product Data Information)
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SUGGESTED SPECIFICATION

1.0 SCOPE This specification covers requirements for materials, equipment and application of intumescent mastic to provide fire protection to steel structures and supports as indicated on the design drawings, and in accordance with applicable requirements of contract documents. Further, this specification shall be supplemented by the applicable requirements of building codes, insurance rating organizations and all other authorities having jurisdiction.

1.1 QUALIFICATION OF SUBCONTRACTORS Application of Albi Clad TF fireproofing shall be performed by qualified, factory-trained applicators having proper equipment and training to complete the installation in accordance with manufacturer's recommendations. Proof of such qualification shall be submitted with bid documents.

1.2 SURFACE ACCEPTABILITY

1.2.1 Albi Clad TF intumescent mastic shall be directly applied to surfaces that have been properly prepared to receive this fireproof coating. The surfaces must be clean and dry, free from rust, grease, dust or other contaminants that will interfere with proper bonding.

1.2.2 All steel surfaces shall be primed with compatible metal primer prior to fireproofing application. Phenolic modified alkyd primer (Albi 487S) or acrylic (Albi 490W) or approved equal.

1.2.3 Where existing painted steel is to be fireproofed with intumescent mastic, existing paint surface must be checked for compatibility with intumescent coating prior to fireproofing application. Follow mastic fireproofing manufacturer's instructions for compatibility check.

1.3 COORDINATION WITH OTHER TRADES

Albi Clad TF shall be installed after all steel is in place, but before ducts, pipe work, equipment or other obstructions are installed so that fireproofing can be applied to all exposed steel.

1.4 DELIVER & STORAGE

Albi Clad TF shall be delivered to the jobsite in factory sealed containers.

2.0 FIREPROOFING

Fireproofing shall be applied in accordance with drawings or specifications, and shall conform to fire protective ratings as outlined by ASTM E-119 and listed by Underwriter's Laboratories, Inc.

2.1 COATING

Intumescent mastic fireproof coating for interior use shall be Albi Clad TF as manufactured by Albi Manufacturing, Division of StanChem, Inc. 401 Berlin Street, East Berlin, Connecticut, USA, 06023.

2.2 TOPCOATING

Overcoating is not required with Albi Clad TF. However, if a topcoat is required for color-coding, aesthetics or additional surface protection against spills, a suitable topcoat shall be used. For unusually severe environments consult the fireproofing manufacturer for recommendations of appropriate topcoats.

3.0 INSTALLATION & WORKMANSHIP

3.1 AIRLESS SPRAY EQUIPMENT - PUMPS

Due to the properties of Albi Clad TF, we recommend application with airless spray equipment. This equipment is manufactured and distributed by leading pump manufacturers including:

Brand / Model

Speeflo - Titan 5500 gas or electric operated
Speeflo - Titan Epic Series 1200 HPG Gas
Graco - Gmax 5900, 7900, or 10000 Gas Operated

HOSES

Material lines for airless application must be rated at a minimum 3,000+ psi working pressure with a 3/8 inch inside diameter. Hose length should not exceed 150 feet without consulting Albi Manufacturing.

SPRAY GUNS / SPRAY TIPS

Brand / Model

Binks - 1M Airless
Graco - Contractors Airless
Titan - SGX-20 Airless
Wagner - G-10N Airless

Brand / Model

ASM - Zip Tips
Graco - Airless Tips
Titan - Airless Tips

You should always have a range of tip sizes on hand at a job site since steel sizes, hose length, vertical lift, and job site conditions all impact spray patterns. We recommend a range of tip sizes from 419-423 & 519-523.

3.2 Final dry film thickness application must conform to manufacturer's listed design or to recommendations for specified rating.

3.3 Small patchwork or damaged areas may be hand-trowelled or gloved. When hand trowelling, tools must be kept wet with water to avoid sticking.

3.4 THICKNESS OF APPLICATION

Albi Clad TF shall be applied to the thickness required in accordance with the acceptable test data. Thickness shall be measured on the basis of wet film thickness taken by frequent random probe measurements during application. All test data measurements are taken on dry film thickness, supervision of application must be undertaken while material is being installed, since final, cured, dry film thickness will reflect shrinkage due to evaporation of water.

3.5 SAMPLE APPLICATION

Before proceeding with the work, the applicator shall apply a section of approximately 100-sq. ft. (9.3 sq. meters) area. This section shall be witnessed by architect or owner's representative and shall be subject to their approval to be used as guide for texture and thickness of the finished work.

3.6 CLEAN UP

Work area shall be maintained in an orderly condition with good housekeeping conditions prevailing. Upon completion of installation, all debris shall be cleared and removed from jobsite.

3.7 GUARANTEE

3.7.1 Manufacturer shall warrant material to conform to its specification, and be free of manufacturing defects for a period of six months.

3.7.2 Applicator shall guarantee that the installation of material conforms to manufacturer's recommendations and project specifications, and shall further guarantee the workmanship connected with the installation for a period of one year from date of installation

Rev: 12/00

WARRANTY

LIMITED WARRANTY/LIMITATION OF LIABILITY: Seller warrants that its products will meet the specifications which it sets for them. Seller's responsibility under this warranty will be limited solely to replacing the products which prove defective, provided that Buyer gives Seller prompt notice in writing of said defect and satisfactory proof thereof. Products may be returned to Seller only after written authorization has been obtained from Seller. The foregoing warranty is in lieu of all other warranties, whether oral, written, express, implied or statutory. IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WILL NOT APPLY. Technical or other advice is furnished by us solely as an accommodation and shall not increase the scope of our responsibilities or liability. Seller's warranty obligations and Buyer's remedies hereunder are solely and exclusively as stated herein: In no event will Seller be liable either for the labor and other associated costs incurred in replacing the product, including, but not limited to, its removal and application, or for other incidental or consequential damages.

THE CODE AUTHORITY

UL Mark brings added value to intumescent coatings

Code authorities have asked us to explain the advantage of having the UL Mark on intumescent coatings and the significance of that Mark on intumescent coatings that provide hourly fire endurance ratings for structural steel members. Here's that explanation.

Hourly fire endurance ratings are determined from tests conducted in accordance with UL 263, Standard for Safety for Fire Tests of Building Construction and Materials. The fire endurance rating requirements in standards ASTM E119 and UBC Standard 43-1 are identical to those in UL 263. These standards all describe conditions that must be maintained during the test, the measurements to be made, and the rating acceptance criteria. The UL Mark shown identifies intumescent coating materials tested in accordance with Standard UL 263.

Underwriters Laboratories Inc. Classified Mastic Coatings Fire Resistance Classification See UL Fire Resistance Directory

However, that's where the similarities end. The UL Mark on intumescent coatings also means that the coatings are subjected to a series of tests that observe the retention of the coatings' fire resistive properties after being exposed to several simulated environmental conditions. These environmental conditions include high humidity, simulated aging and exposure to an atmosphere

that contains concentrations of carbon dioxide and sulfur dioxide gases.

Coatings identified for interior applications are also subjected to washings and concentrations of chlorine. Coatings intended for outdoor applications are subjected to ultraviolet light, salt spray, and wet/freeze/dry cycling tests, in addition to the high humidity, simulated aging, and carbon dioxide and sulfur dioxide exposure evaluations described above.

Samples exposed to the simulated environmental conditions are typically 2-foot long, 6 by 6-inch steel tubes coated with the intumescent material. After exposure, the samples are subjected to the furnace conditions required by the fire test standard. To obtain the UL Mark, the performance of the conditioned samples must not be significantly reduced when compared to the performance of samples not subjected to the environment.

The added value is that in addition to the hourly fire endurance performance measurements specified in UL 263, ASTM E119 and UBC Standard 43-1, an intumescent coating that has earned the UL Mark has also been exposed to several simulated environmental tests that offer an indication that the coating will retain its fire resistive properties during anticipated usage.

If you have additional questions on UL's program for intumescent coatings, contact the Codes & Technical Services staff member at the UL laboratory most convenient for you. .

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