NYC Department of Buildings
280 Broadway, New York, NY 10007
Patricia Lancaster, FAIA, Commissioner
(212) 566-5000, TTY: (212) 566-4769

Report of Materials and Equipment Acceptance Division

Pursuant to Administrative Code Section 27-131, the following equipment or material has been found acceptable for use subject to the terms and conditions contained herein.

MEA 212-04-M Vol. 2

Manufacturer:	Isolatek International 41 Furnace Street Stanhope, N.J. 07874
Trade Name(s):	Cafco Sprayfilm® WB 4
Product:	Intumescent coating for fire protection of structural steel for Class II buildings MEA Index #310 – Fire Protection
Pertinent Code Section(s):	27-323, 27-324, 27-133
Prescribed Test(s):	RS 5-2 (ASTM E119)
Laboratory:	Underwriters Laboratories, Inc.
Test Report(s):	1. UL File CR2566 dated 8/19/1998, 2/8/1999, 2/21/2000, 3/1/2000, 12/21/2000 and 8/1/2002. 2. UL File R16639, Project 01NK33902 dated 8/9/2001, 11/13/2002, 12/19/2002 and 3/27/2003. 3. UL File R3749 dated 9/29/2001 and 10/26/2002 4. UL Letter R16639, Project 03NK11063 dated 11/19/2003. 5. UL Letters Reference File R16639 and R16640 dated 7/25/2001 and 5/9/2005, respectively.

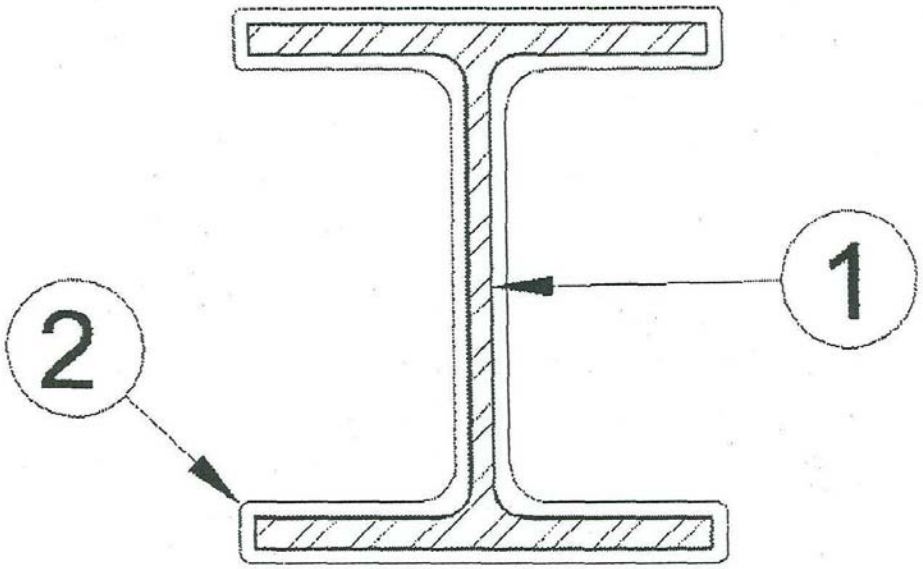
Description: Structural steel fire protection assemblies, as per sketch of following page, utilizing Cafco Sprayfilm WB-4 intumescent fire protection material, applied to required thicknesses following the manufacturer's instructions to achieve the fire resistance rating listed on the following pages and in accordance with Underwriters Laboratories Inc. Design No. X649.

Fire Resistance Ratings - ANSI/UL 263

Design No. X649

October 25, 2005

Ratings - 1, 1-1/2, 2, 3 and 4 Hr. (See Item 2)



1. **Steel Column** — Wide flange steel columns with the minimum sizes shown in the tables below. Columns shall be free of dirt, loose scale and oil. Columns shall be primed with a phenolic modified alkyd resin primer.

2. **Mastic and Intumescent Coatings*** — Coating spray, brush or trowel applied directly from containers to desired thickness. See following Tables for appropriate final dry thickness and applicable rating.

Steel Size	W/D	1 Hr Min Thickness, In.	1-1/2 Hr Min Thickness, In.	2 Hr Min Thickness, In.	3 Hr Min Thickness, In.	4 Hr Min Thickness, In.
W8 x 10	0.33	0.145	0.266	NR	NR	NR
W12 x 14	0.36	0.133	0.263	NR	NR	NR
W12 x 16	0.41	0.117	0.230	NR	NR	NR
W6 x 12	0.44	0.109	0.215	0.338	NR	NR
W8 x 15	0.48	0.100	0.197	0.310	NR	NR
W10 x 22	0.52	0.092	0.182	0.286	NR	NR
W4 x 13	0.55	0.087	0.172	0.271	NR	NR
W6 X 16	0.58	0.083	0.163	0.257	0.504	NR
W8 x 24	0.59	0.075	0.130	0.213	0.504	NR
W14 x 34	0.63	0.075	0.130	0.213	0.489	NR
W8 x 28	0.68	0.070	0.130	0.213	0.453	NR
W8 x 35	0.74	0.065	0.128	0.201	0.416	NR
W10 x 39	0.78	0.061	0.121	0.191	0.395	NR
W10 x 49	0.84	0.057	0.113	0.177	0.367	NR
W10 x 45	0.89	0.054	0.106	0.167	0.346	NR
W16 x 57	0.95	0.050	0.099	0.157	0.324	NR
W8 x 48	1.00	0.048	0.095	0.149	0.308	NR
W14 x 90	1.07	0.045	0.088	0.139	0.288	NR
W10 x 68	1.14	0.042	0.083	0.131	0.270	NR
W18 x 97	1.21	0.040	0.078	0.123	0.255	NR
W10 x 77	1.28	0.038	0.074	0.116	0.241	NR
W16 x 100	1.36	0.036	0.069	0.109	0.227	NR
W10 x 88	1.45	0.034	0.065	0.103	0.213	NR
W14 x 132	1.54	0.032	0.061	0.097	0.200	NR
W12 x 120	1.64	0.030	0.058	0.091	0.188	NR
W14 x 159	1.77	0.028	0.056	0.085	0.187	NR
W14 x 176	1.95	0.025	0.051	0.077	0.178	NR
W14 x 193	2.12	0.023	0.047	0.071	0.164	NR

W14 x 211	2.30	0.023	0.043	0.066	0.151	NR
W14 x 233	2.52	0.023	0.040	0.060	0.138	NR
W14 x 257	2.75	0.023	0.036	0.055	0.126	NR
W14 x 283	3.00	0.023	0.033	0.050	0.116	0.194

NR = No Rating

As an alternate to the above table, the required thickness of coating (in inches) to be applied to all surfaces of wide flange steel columns for 1 hour ratings, in the W/D range of 0.33 to 1.14, may be determined from the following equation:

T = 0.04785/(W/D)

Where T = Thickness of coating in the range of 0.042 to 0.145 in., W = Weight of steel column in pounds per linear foot, D = Heated perimeter of steel column section in inches.

As an alternate to the above table, the required thickness of coating (in inches) to be applied to all surfaces of wide flange steel columns for 1-1/2 hour ratings, in the W/D range of 0.33 to 1.64, may be determined from the following equation:

T = 0.0945/(W/D)

Where T = Thickness of coating in the range of 0.058 to 0.266 in., W = Weight of steel column in pounds per linear foot, D = Heated perimeter of steel column section in inches.

As an alternate to the above table, the required thickness of coating (in inches) to be applied to all surfaces of wide flange steel columns for 2 hour ratings, in the W/D range of 0.44 to 1.64, may be determined from the following equation:

T = 0.1489/(W/D)

Where T = Thickness of coating in the range of 0.091 to 0.338 in., W = Weight of steel column in pounds per linear foot, D = Heated perimeter of steel column section in inches.

As an alternate to the above table, the required thickness of coating (in inches) to be applied to all surfaces of wide flange steel columns for 3 hour ratings, in the W/D range of 0.58 to 1.64, may be determined from the following equation:

T = 0.3082/(W/D)

Where T = Thickness of coating in the range of 0.188 to 0.504 in., W = Weight of steel column in pounds per linear foot, D = Heated perimeter of steel column section in inches.

As an alternate to the above, the following table listing metric units may be used.

Steel Size	M/D	Hp/A	1 Hr Min Thickness, mm	1-1/2 Hr Min Thickness, mm	2 Hr Min Thickness, mm	3 Hr Min Thickness, mm	4 Hr Min Thickness, mm
W8 x 10	19.1	412	3.68	6.76	NR	NR	NR
W12 x 14	21.2	371	3.38	6.67	NR	NR	NR
W12 x 16	24.0	327	2.96	5.85	NR	NR	NR
W6 x 12	25.9	303	2.76	5.46	8.60	NR	NR
W8 x 15	28.1	280	2.53	5.00	7.88	NR	NR
W10 x 22	30.4	258	2.34	4.62	7.27	NR	NR
W4 x 13	32.4	242	2.21	4.36	6.88	NR	NR
W6 X 16	33.9	232	2.10	4.14	6.52	12.80	NR
W8 x 24	34.6	227	1.91	3.31	5.42	12.80	NR
W14 x 34	37.1	213	1.91	3.31	5.42	12.43	NR

W8 x 28	40.0	197	1.79	3.31	5.42	11.51	NR
W8 x 35	43.6	181	1.64	3.24	5.11	10.58	NR
W10 x 39	45.4	172	1.56	3.08	4.85	10.04	NR
W10 x 49	49.1	159	1.45	2.66	4.50	9.32	NR
W10 x 45	51.9	151	1.37	2.70	4.25	8.80	NR
W16 x 57	55.9	141	1.28	2.53	3.98	8.24	NR
W8 x 48	58.6	134	1.22	2.40	3.78	7.83	NR
W14 x 90	62.6	125	1.14	2.24	3.53	7.32	NR
W10 x 68	66.9	118	1.07	2.11	3.32	6.87	NR
W18 x 97	71.0	111	1.02	1.98	3.13	6.47	NR
W10 x 77	75.2	105	0.97	1.88	2.95	6.12	NR
W16 x 100	79.4	99	0.91	1.76	2.78	5.76	NR
W10 x 88	84.9	92	0.85	1.66	2.61	5.40	NR
W14 x 132	90.0	87	0.80	1.56	2.46	5.08	NR
W12 x 120	96.2	82	0.75	1.46	2.31	4.77	NR
W14 x 159	103.9	76	0.70	1.43	2.16	4.74	NR
W14 x 176	114.4	69	0.63	1.30	1.96	4.52	NR
W14 x 193	124.4	63	0.59	1.19	1.81	4.16	NR
W14 x 211	135.0	58	0.59	1.10	1.66	3.83	NR
W14 x 233	147.9	53	0.59	1.00	1.52	3.50	NR
W14 x 257	161.4	49	0.59	0.92	1.39	3.21	NR
W14 x 283	176.0	45	0.59	0.84	1.28	2.94	4.92

NR = No Rating

As an alternate to the above table, the required thickness of coating (in mm) to be applied to all surfaces of wide flange steel columns for 1 hour ratings, in the M/D range of 19.1 to 66.9, may be determined from the following equation:

$T = 71.6/(M/D)$

Where T = Thickness of coating in the range of 1.07 to 3.68 mm, M = Weight of steel column in kilograms per linear meter, D = Heated perimeter of steel column section in meters.

As an alternate to the above table, the required thickness of coating (in mm) to be applied to all surfaces of wide flange steel columns for 1-1/2 hour ratings, in the M/D range of 19.1 to 96.2, may be determined from the following equation:

$T = 141.3/(M/D)$

Where T = Thickness of coating in the range of 1.46 to 6.76 mm, M = Weight of steel column in kilograms per linear meter, D = Heated perimeter of steel column section in meters.

As an alternate to the above table, the required thickness of coating (in mm) to be applied to all surfaces of wide flange steel columns for 2 hour ratings, in the M/D range of 25.9 to 96.2, may be determined from the following equation:

T = 222.7/(M/D)

Where T = Thickness of coating in the range of 2.31 to 8.60 mm, M = Weight of steel column in kilograms per linear meter, D = Heated perimeter of steel column section in meters.

As an alternate to the above table, the required thickness of coating (in mm) to be applied to all surfaces of wide flange steel columns for 3 hour ratings, in the M/D range of 33.9 to 96.2, may be determined from the following equation:

T = 461.0/(M/D)

Where T = Thickness of coating in the range of 4.77 to 12.80 mm, M = Weight of steel column in kilograms per linear meter, D = Heated perimeter of steel column section in meters.

ISOLATEK INTERNATIONAL — Type SprayFilm-WB 3, Investigated for Interior General Purpose. Type SprayFilm-WB 4, Investigated for Interior General Purpose. Type SprayFilm-WB 4, Investigated for Exterior Use with top coat as described in Item 3.

3. **Top Coat** — Type SprayFilm - TOPSEAL required for Exterior Use, applied at a minimum dry thickness of 14 mils (0.34 mm) over the intumescent material. See Classification information in the Mastic Coating (CDWZ) category, Isolatek International, for mixing requirements.

*Bearing the UL Classification Mark

Terms and Conditions: The above-described fire-rated assemblies are accepted for Class I and Class II Buildings only, as having the fire resistance ratings give above, when members framing into the columns have at least the same fire-resistance rating, provided the following requirements for application and protection of the sprayed fireproofing be adhered to:

1. Where used for protection of column(s) in fireproofing buildings, each such column(s) shall bear an identifying tag installed at 7ft. 0 in. above the finished floor. Subject tag shall be of metal construction mechanically attached to such column(s) and shall state the following: "This beam has been fireproofed with MEA approved Cafco Sprayfilm finish and such finish shall not be removed, nor any subsequent coating shall be applied other than Cafco SprayFilm, SprayFilm Topseal, and any finish coat approved by the manufacturer of Cafco SprayFilm".

2. Surfaces to receive intumescent coating shall be cleaned prior to the application of the fireproofing.

3. The finished fireproofing shall be sprayed to a uniform thickness, which shall not be less than the minimum thickness specified.

4. The general contractor and the owner shall provide qualified personnel to supervise the application of the sprayed fire resistive material. They shall certify to the Department of Buildings that the finished fireproofing of the completed building is in full compliance with the acceptance requirements and drawings approved by the Department of Buildings.

5. The installation of the sprayed fire resistive materials shall be subject to the controlled inspection requirements of Section 27-132 of the Building Code.

6. The use of this material shall be subject to all pertinent regulations of the Department of Air Resources and the Department of Health.

7. All installations shall comply with 118-68 GR, the New York City Building Code, the Fire Department Directives, the manufacturer's instructions and laboratory recommendations.

8. All shipments and deliveries of such materials comprising this assembly shall be accompanied by a certificate of label certifying that the materials shipped or delivered are equivalent to those tested and accepted for use, as provided in Section 27-131 of the New York City Building Code.

Final Acceptance May 7, 2008

Examined By Simon Derkhodaian