Pursuant to Administrative Code Section 27-131, the following equipment or material has been found acceptable for use in accordance with the Report of Materials and Equipment Acceptance (MEA) Division.

Patricia J. Lancaster, F.A.I.A., Commissioner
MEA 210-04-M
Report of Material and Equipment Acceptance Division
Manufacturer - Isolatek International, 41 Furnace Street, Stanhope, New Jersey 07874.

Trade Name(s) - Cafco Sprayfilm WB-4.

Product - Intumescent coating for fire protection of structural steel for Class II Building.

Pertinent Code Section(s) - 27-323, 27-324, 27-133.

Prescribed Test(s) - RS 5-2 (ASTM E119).

Laboratory - Underwriters Laboratories Inc. of Canada, Underwriters Laboratories.


Description - Structural Steel fire protection assemblies, as per sketch below 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 Nos. D902.
Concrete 4-1/2
3-1/2
(1) Beam — W12X14. W8X28 or W6xl2. min size, see Items 6A through GE.

1A. Steel Joists — (Not shown) — As an alternate to Item 1 — May be either uncoated or provided with a shop coat of point Composite or noncomposite Welded or bolted to end supports. Designed per S.J.I specifications for a max design stress of 3(1 ksi. The top chords shall consist of two angles measuring 1 1/4 by 1-1/4 by 0.125 in. thick Bottom chords shall consist of two round bars measuring 0.566 in. in diam. or two angles measuring 1 1/2 by 0.188 in. thick and 5-1/16 in. long. Web members shall consist of 0.565 in. diam bars. The min depth and weight shall be 1.5 In. and 4.9 lb/ft.

1B. Steel Joists — (Not shown) — As an alternate to Item 1 — Composite or noncomposite and welded or bolted to end supports. May be uncoated or provided with a shop coat of paint. Designed per S.J.I specifications for a max design stress of 30 ksi. Top chords shall consist of two angles measuring 1-1/2 by 1-1/2 by 0.156 in. thick Bottom chord shall consist of two round bars measuring 0.575 in. in diam. or two angles measuring 1 by 1 by 0.125 in. thick. Bearing plates shall consist of two angles measuring 2 by 2 by 0.192 in. thick and shall be min 4-15/16 in. long. The second web member at each end shall consist of 0.854 in. diam round bar. All remaining web members, including the end web members, shall consist of 0.774 in. diam round bars. Bridging per S.J.I specifications is required when noncomposite joists are used.

1C. Steel Joists — (Not shown) — As an alternate to Item 1 — Composite or noncomposite. Welded or bolted to end supports. Designed per S.J.I specifications for a max design stress of 30 ksi. The top chords shall consist of two angles measuring 1-1/2 by 1-1/2 by 0.156 in. thick. Bottom chord shall consist of two round bars measuring 0.675 in. in diam. or two angles measuring 1 by 1 by 0.125 in. thick. The second web member at each end shall consist of 0.654 in. diam round bar. All remaining web members, including the end web members, shall consist of 0.774 in. diam round bars. Bridging per S.J.I specifications is required when noncomposite joists are used.

1D. Steel Joists — (Not shown) — As an alternate to Item 1 — Composite or noncomposite, welded or bolted to end supports. May be uncoated or provided with a shop coat of paint. Designed per S.J.I specifications for a max design stress of 30 ksi. The top chords shall consist of two angles measuring 1-1/2 by 1-1/2 by 0.156 in. thick. Bottom chord shall consist of two round bars measuring 0.575 in. in diam. or two angles measuring 1 by 1 by 0.125 in. thick. Bearing plates shall conform to S.J.I specifications. Top chords shall consist of two angles measuring 1-1/4 by 1-1/4 by 0.127 in thick. Bottom chords shall consist of two round bars measuring 0.566 in. in diam. or two angles measuring 1-1/2 by 2 by 0.127 in thick. The min depth and weight shall be 1.5 In. and 4.9 lb/ft respectively.

1E. Normal Weight or Lightweight Concrete — Normal weight concrete, carbonate or siliceous aggregate. 3500 psi compresive strength, vibrated, 4 to 7 per cent entrained air.

2. Normal Weight or Lightweight Concrete — Normal weight concrete, carbonate or siliceous aggregate. 3500 psi compressive strength, vibrated. Lightweight concrete, expanded shale or slate aggregate by rotary-kiln method or expanded fly aggregate by rotary-kiln or silicate red-grate method. 3000 psi compressive strength, vibrated, 4 to 7 per cent entrained air.

3. Welded Wire Fabric — 6x6 10/10 SWC

4. Steel Floor and Form Units — Composite 1-1/2, 1-5/8, 2 or 3 in. deep flat units or 4-1/2 in. deep non-composite galv units. Fluted units may be flanged or flanged with close cellular or partial cellular. The following combinations of units may be used:

(1) All U. 26. 28 or 36 in. wide cellular or partial cellular
(2) All flanged.
(3) One or two 3 in. deep. 4 in. wide. IB/18 MSC min cellular alternating with 3 in. deep fluted or other cellular.
(4) Any blend of fluted and 24. 26. 28 or 36 in. wide cellular or partial cellular.
(5) Composite units or 4-1/2 in. deep. 30 in. wide. 24 MSC min galv units with shear wires factory welded to deck corrugations. Some units may be supported by OC through welding washers. For shear wire spacing of 2 in. or less the steel deck stress shall not exceed 211 KSI. For shear wire spacing greater than 2 in. in OC but less than or equal to 12 in. OC steel deck stress shall not exceed 12 KSI.

ASC STEEL DECK DIV OF
*May be reduced to 3/4 in. on one 1-1/2 hr Unrestrained Beam Rating when raw material is sprayed 2 in. beyond the beams top flange and no reduction in thickness is made at the tips of the bottom flange.

+ Thickness of Spray-Applied Fire Resistive Materials may be reduced to one half of this thickness on the lower flange tips of the steel beam.

+-T - When bottom chords consist of 1 by I by 0.125 in. thick steel angles, the thickness of spray-applied fire resistive material shall be increased by 1/3 in. on the bottom chord only.

CIL GROUP LTD — Type D-CIF or Type II. Type EBS or Type X adhesive which may also be used as a surface sealer.

ISOLEATEK INTERNATIONAL — Type D-CIF, HR Type II. Type EBS or Type X adhesive which may also be used as a surface sealer.

6A Spray-Applied Fire Resistive Materials — Alternate to Item 6. See table below for appropriate thicknesses. When fluted steel deck is used and the fire protection thickness selected is based on all fluted deck, the area between the steel deck and the top flange of the steel beam shall be filled. When fluted steel deck is used and the steel beam is sprayed with the thicknesses applicable to cellular or blended units, the area between (he steel deck and the top flange of the steel beam shall be plugged. Prepared by mixing with water and spray-applied in one or more coats to beam surfaces which must be clean and free of dirt, loose scale and oil. Min average density of 17.5pcf with min individual valued 17.0 pcf. For method of density determination, see Design Information Section.

Sprayed Material.
The thickness of the material on the Structural Members (Item 1, 1C, or ID) shall he as follows:

1. **Walls** (Item 1)
   - Dry Thickness
     - Minimum Dry Thickness: 1/16 in.

2. **Beams** (Item 1C)
   - Minimum Thickness: 1-1/2 in.

3. **Floor and Form Units** (Item ID)
   - Minimum Thickness: 3-1/4 in.

Material Notes:
- **Concrete** — As an alternate to hems 6 through GC. For use with normal weight concrete and fluted steel flour and farm mills only. Mm. size WxJS beams shall be primed with a phenolic modified alkyl primer. It is a thickness of 1 mil. Coating spray or brush applied in accordance with the manufacturer's instructions at the ruin dry thickness as shown in the table below. The thickness shown below includes the 1 mil of primer. When mineral wool (Item 1E) is used, the top surface of the beam need not be protected with the coating. When mineral wool (Item 1E) is not used, the top surface of the beam flange must be protected with the coating material at the same coin dry thickness at a tin distance of 1 in. (25 mm) inward from the flange tip on both sides of the beam.

- **Cellulose** — As an alternate to hems 6 through GC. For use with normal weight concrete and fluted steel flour and farm mills only. Mm. size WxJS beams shall be primed with a phenolic modified alkyl primer. It is a thickness of 1 mil. Coating spray or brush applied in accordance with the manufacturer's instructions at the ruin dry thickness as shown in the table below. The thickness shown below includes the 1 mil of primer. When mineral wool (Item 1E) is used, the top surface of the beam need not be protected with the coating. When mineral wool (Item 1E) is not used, the top surface of the beam flange must be protected with the coating material at the same coin dry thickness at a tin distance of 1 in. (25 mm) inward from the flange tip on both sides of the beam.

- **Mineral and Fiberboards** — (Optional, not shown). Applied over concrete floor with no restrictions on board thickness. When mineral and fiberboards are used, the unrestrained beam rating shall be increased by a minimum of 1/2 hr. See Mineral and Fiber Board category for names of manufacturers.

- **Metal Lathing** — (Not shown) — 3/8 in. diamond mesh or rib lath, 3.4 lbs per sq yd expanded steel attached to beam with clips spaced 6 in. O.C. max. or Bin id.

- **Insulating Concrete** — (Optional, not shown) — Various types of insulating concrete prepared and applied as follows:
  1. Vemiculite Concrete - Blend 6 in 8 cu ft of Vemiculite Abragel® to 94 lb Portland cement and air entraining agent. Min thickness of 1 in., as measured to the top surface of the insulating concrete or foamed plastic (Item 15) when it is used. See Xe’immHie Aggregate category for names of Classified companies.

- **CELLCORE INC** - Cast dry density of 31 (± or ± 3.0)pcf.

- **CELLULOFOAM CONCRETE SYSTEMS, DIV. OF CELLULOFOAM CONCRETE OF CANADA (EASTERN) LTD** - Cast dry density of 30 (± or ± 3.0)pcf.

- **ELAST12ELL CORP OF AMERICA** - Type II, with a cast dry density of 39 (± or -3.0)pcf.

- **SIP/PLAST INC** - Cast dry density of 36 (± or -3.0)pcf.

- **CELLULAR CONCRETE L L C** - Mix *3.

**Technical Notes:**
- **Thickness**
  - Thickness applies when optional Item 12 or 13 are used over 3-1/4 in.
  - Lightweight concrete topping.

- **Sprayfilm-WB** — Investigated Interior General Purpose.
  - Type SprayFilm-WB 1. Investigated for Interior General Purpose Type SprayFilm-WB 2. Investigated for Interior General Purpose Type SprayFilm-WB 3. Investigated for Interior General Purpose.

- **ISOLATEK INTERNATIONAL**
  - Type SprayFilm-WB 1. Investigated for Interior General Purpose.
  - Type SprayFilm-WB 2. Investigated for Exterior General Purpose.

- **SiP/PLAST INC**
  - Mix *1.

- **ELAST12ELL CORP OF AMERICA**
  - Type II, with a cast dry density of 39 (± or -3.0)pcf.

**Additional Notes:**
- **Mineral and Fiberboards** — (Optional, not shown). Applied over concrete floor with no restrictions on board thickness. When mineral and fiberboards are used, the unrestrained beam rating shall be increased by a minimum of 1/2 hr. See Mineral and Fiber Board category for names of manufacturers.

**Manufacturer's Information:**
- **CELUFOAM CONCRETE SYSTEMS, DIV. OF CELLULOFOAM CONCRETE OF CANADA (EASTERN) LTD**
  - Cast dry density of 30 (± or ± 3.0)pcf.

**Certifications:**
- **CELUFOAM CONCRETE SYSTEMS, DIV. OF CELLULOFOAM CONCRETE OF CANADA (EASTERN) LTD**
  - Cast dry density of 30 (± or ± 3.0)pcf.

**Classification Requirements:**
- **ISOLATEK INTERNATIONAL**
  - Type SprayFilm-WB 1. Investigated for Interior General Purpose.

**Notes:**
- **Thickness**
  - This thickness applies when optional Item 12 or 13 are used over 3-1/4 in.

**AISC**
- **AISC**
  - Category for names of manufacturers.
ELASTIZELL CORP OF AMERICA -Type II. Mix #1 of cast dry density 39 (- or -) 30 pcf. Mix #3 of cast dry density 47 (± or ± 3.0 pcf.)

S1PLAST 1NC -Mix «.

D. Perlite Concrete - 6 cu ft of Perlite Aggregate to 9-1 lb of Portland Cemerv. and 1-1/2 pt ai entraining agent. Min thickness 2 in. in measured to the rop surface of structural concrete or foamed plastic Illetu 15A) when it is used. See Perlite Aggregate (CFFX) in Fire Resistance Directory for names of Classified companies.

] J. Foamed Plastic* — (Optional-not shown) — For use only with vermiculite (Item HA) or cellular Item 14B1 concretes-Rigid polystyrene foamed plastic insulation having slots and/or holes sandwiched belivetn vermiculite concrete slurry which is applied lo the normal or lightweight concrete surface and vermiculite concrete topping (Item 14A). Max thickness to be 8 la See Foamed Plastic* IBRYX) category in Building Materials Directory or Framed Plastic (CCYW) Category in Fire Resistance Directory for list of Classified companies.

ISA. Foamed Plastic* — (Not Shown) - For use only with cellular or perlite concrete Nominal 24 by 48 by max 8 in. thick polystyrene foamed plastic insulation boards having a density of I 0 (± or ± 0.1) pcf, encapsulated within concrete topping. Each insulation board shall contain six nominal 3 in. holes oriented in two rows of three holes each with the holes spaced 12 in. CC transversely and iii in. OC longitudinally.


�. Roof Covering Materials’ — (Optional, not shown) — Consisting of materials compatible with insulations described herein which provide Class A, B or C coverings. See Built-Up Roof Covering Materials in Building Materials Directory.

? Insulated Concrete— [Optional, not shown] — various types of insulated concrete prepared and applied in the thickness indicated. A Vermiculite Concrete — Mix consists of B cu ft of Vermiculite Aggregate*. 94 lbs of Portland cement and 6 ox of air entraining agent. Thickness to be 2 in min from the top plane uf steel roof deck. ELASTIZELL CORP OF AMERICA -Types MS16-U. MSV 200.

B. Perlite Concrete — Mix consists of 6.2 cu ft Perlite Aggregate* to 94 lbs of Portland cement and 1-1/2 pt ai entraining agent. Compressive strength 80 psi min.

See Perlite Aggregate (CFFX) category for names of Classified companies.

Bearing the UL Classification Mark

Recommendation - That the above described fire rated assemblies be accepted for Class II Buildings only, as having the fire resistance ratings given 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 7"-0" 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 applied other than 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.

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 the materials comprising this assembly shall be accompanied by a certificate or label certifying that the materials shipped or delivered are equivalent to those tested and acceptable for use, as provided for in Section 27-131 of the Building Code.

Final Acceptance \textit{Sep 21/04}

Final Acceptance \textit{Sep 21/04}

Examined by \textit{S Deerhider}