

CITY OF NEW YORK
DEPARTMENT OF BUILDINGS

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 33-04-M

Report of Material and Equipment Acceptance Division

Manufacturer – Isolatek International, 41 Furnace Street, Stanhope, NJ 07874.

Trade Name(s) – CAFCO BLAZE-SHIELD II and HP.

Product - Spray-applied material for fire protection of beams and joist supporting floor/ceiling assembly.

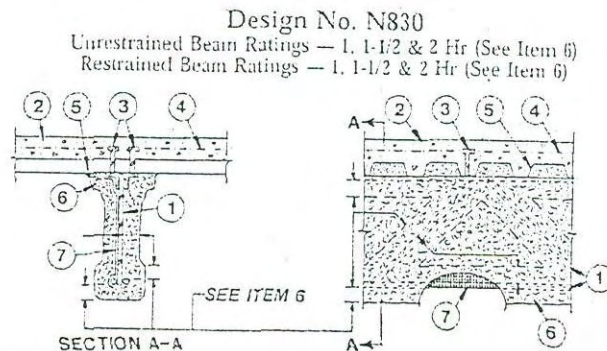
Pertinent Code Section(s) - 27-323, 27-324.

Prescribed Test(s) - RS 5-2 (ASTM 119).

Laboratory – Underwriters Laboratories, Inc.

Test Report(s) – UL File R3749, dated September 23, 1992, January 30, 1992, May 3, 1990, April 30, 1986, December 10, 1984, March 12, 1981, July 29, 1976, and January 9, 1997.

Description - Fire protection of beams and joist supporting floor/ceiling assemblies, as per sketch below utilizing the CAFCO BLAZE-SHIELD II and HP fire protection material, spray-applied to the required thicknesses in achieving the fire resistance ratings listed below and in accordance with Underwriters Laboratories Inc. Designs listed.



1. Steel Joists — May be either uncoated or provided with a shop coat of paint. Composite or noncomposite. Welded or bolted to end supports. Designed per S.J.L. specifications for a max design stress of 30 ksi. The 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. Bearing plates shall consist of two angles measuring 1-1/2 by 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 8 in. and 4.9 lb/ft, respectively.
2. Normal Weight or Lightweight Concrete — 2-1/2 in. thick min compressive strength of 3000 psi. For normal weight concrete, either carbonate or siliceous aggregate may be used. Unit weight, 145 +/- 3 pcf. For lightweight concrete, unit weight may range from 104 to 120 pcf.
3. Shear Connector — (Optional) — Studs, min 1/2 in. diam headed type or equivalent per A.I.S.C. specifications. Welded to the top flange of joist through the steel floor units. Studs welded, as recommended by the stud manufacturer.
4. Welded Wire Fabric — Min 6x6-W1.4xW1.4.
5. Steel Floor and Form Units — 1-1/2 to 3 in. deep corrugated, fluted or cellular units welded to joists. Max usage of cellular units shall consist of 1:1 blend with fluted units.
6. Spray-Applied Fire Resistive Materials* — Spray applied in one or more coats to a final thickness as shown in the table below, to steel surfaces which must be clean and free of dirt, loose scale and oil. When fluted units are used, the crest areas above the beam shall be filled with the protection material. Min avg density of 13 pcf and min ind density of 11 pcf for Types II or DC/F. Min avg and min ind densities of 22 and 19 pcf, respectively, for Type HP. For method of density determination, refer to Design Information Section. The following table is for lightweight concrete.

Fluted, Cellular and Corrugated Floor Units
Min. Thickness, In.

Rating Hr	Restrained	Unrestricted	Concrete Type
1	1	1	NW
1-1/2	1	1-9/16	NW
2	1-5/8	2-1/16	NW
1	1-1/8	1-1/8	LW
1-1/2	1-3/16	1-3/4	LW
2	2-1/16	2-1/4	LW

ISOLATEK INTERNATIONAL - Type D-C/E, HP or Type II Investigated for exterior use, Type EBS or Type X adhesive/
surface sealer optional

7. **Class Fiber Mesh (Optional)** - Glass fiber fabric weighing approx 43 oz per sq yd fastened to the webs on one side of joist. The method of attachment must be sufficient to hold the mesh and spray applied fire protection material in place during application of the Spray-Applied Fire Resistive Materials material and until it has cured. Suitable methods include use of hairpins, 18 SWG galv steel tie wire or hot melt glue. Hairpin clips are nom 1-1/4 in. long by 1/2 in. wide made of 0065 in. diam steel wire. Hairpin clips or tie wire located near top and bottom and at intermediate points along each web member to firmly secure the fabric to the joist. When hot melt glue is used, fabric is embedded in min 1/4 in. long beads, spaced min 12 in. OC along the top chord of the bar joists.
- 7A. **Metal Lath** - (Not shown)(Optional) - As an alternate to Item 7, 3/8 in. diamond mesh, expanded steel weighing 1.7 lb/sq yd, secured to one side of joist using No. 18 SWG steel tie wire located at the mid-height of every other web. Both sides of lath must be completely coated with Spray-Applied Fire Resistive Materials with no min thickness.
- *Bearing the UL Classification Mark

Recommendation - That the above described roof/ceiling assemblies be accepted as having the fire resistance ratings indicated, provided the following requirements for application and protection of the sprayed-on fireproofing be adhered to:

1. Surfaces to received sprayed-on fireproofing shall be cleaned of dirt, grease, oil, loose scale, paint, and any extraneous material immediately prior to the application of the fireproofing.
2. The finished fireproofing shall be sprayed to a uniform thickness, which shall not be less than the minimum thickness specified. Fireproofing may be finish troweled to required thicknesses and densities.
3. Density of the sprayed-on fireproofing shall be verified by removing a minimum of three 6-inch square sections, randomly selected from the buildings, subjecting them to 120 degrees Fahrenheit in an oven to constant weight, usually 24 to 48 hours at a laboratory, followed by accurate weighing, measuring and calculation of the density in pounds per cubic foot.
4. The general contractor and the owner shall provide qualified personnel to supervise the application of the sprayed-on fireproofing. They shall certifying to the Department of Buildings that the finished fireproofing of the completed building is in full compliance with the accepted requirements and drawings approved by the Department of Buildings.

5. The material used for the protection of spray-on fireproofing shall be adequate for its purpose and shall be approved by the Department of Buildings.
6. The installation of the sprayed-on fire protection shall be subject to the controlled inspection requirements of Section 27-132.
7. The use of the material shall be subject to all pertinent regulations of the Department of Air Resources and the Department of Health.
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 March/25/04
Examined By S. Desphande