

Intertek ETL SEMKO

September 28, 2006

Fred Serpico
Marino/WARE
777 Greenbelt Parkway
Griffin, GA 30223

Re: Project No. 3099463
ASTM E119-05a Fire Tests of Building Construction and Materials
90-Minute, Unrestrained, Loadbearing Floor/Ceiling Assy.

Dear Mr. Serpico:

This letter will summarize the results of today's test. A 13'3" x 19'4" floor assembly made of 10-in. deep JoistRITE cold formed steel C-Section spaced 16" o.c. The basic design from top to bottom was –

¾" thick VIROC cement board
10" deep JoistRITE steel joists 16" o.c.
6", 4 pcf mineral wool insulation (friction fitted between joists just under VIROC)
RC-1 resilient channel spaced 12" o.c. below joists
Two layers of 5/8" thick Type C gypsum wallboard

A superimposed load of 144 psf was uniformly applied across the top of the VIROC using concrete masonry units prior to the test.

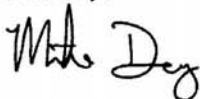
Four of the steel joists were instrumented with thermocouples, and twelve additional thermocouples were placed on top of the VIROC to measure unexposed surface temperatures. The average steel temperature limit was 1100°F, the average unexposed temperature limit was 330°F, and the maximum unexposed temperature limit was 412°F.

After 90 minutes of exposure to the ASTM E119 time/temperature curve, the average steel temperature was 744°F, the average unexposed temperature was 126°F, and the max unexposed temperature was 188°F. The assembly began to rapidly deflect after 90 minutes, up to the point where the concrete blocks on top "bridged" together preventing further movement. The furnace was extinguished at 94 minutes. The maximum deflection after 90 minutes was 7-3/4", and the assembly was judged to have held the load up to that point.

Based on this test, the assembly achieved a fire resistance rating of 1-1/2 hrs.

If you have any questions or comments please feel free to contact me at your convenience.

Sincerely,



Michael E. Dey
Project Manager

Attachments: TC and Load Layout, Photographs, Temperature Data



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