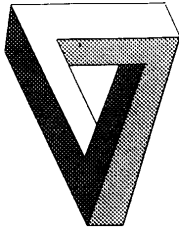


ASTM E119 FIRE TEST
ON FLOOR ASSEMBLY #2 WITH
ONE LAYER OF 1/2" GYPSUM BOARD
FOR
U.S. ARCHITECTURAL PRODUCTS, INC.
LINCOLN, RI 02865
TESTED: NOVEMBER 4, 1997
V100-779-1



VTEC Laboratories Inc.

November 13, 1997

Client: U.S. Architectural Products, Inc.
20 Moshassuck Road
Lincoln, RI 02865

Attn: Mr. Richard Fifield

Subject: Fire Endurance Testing of Floor Deck.

SPECIMEN DESCRIPTION:

A floor assembly was submitted to VTEC Laboratories, Inc. for fire endurance testing. The floor was labeled Assembly #2 and was constructed per Figure 1.0. The exposed side was one layer of 1/2" firecode gypsum board and the unexposed side was 1" Plycem Cement Board. The unexposed side of the specimen was loaded at 50 pounds per square foot during the fire endurance testing according to ASTM E119.

CLIENT DESCRIPTION (Assembly #2):

- * 14" Steel Bar Joists spaced 24" o.c.
- * 22mm PLYCEM screwed directly to the top of the bar joists with #12 x 24 x 2 1/4" Buildex Tek screws # 1092000 spaced 24" o.c. x 12" o.c.
- 25 gauge galvanized metal T-spline installed beneath PLYCEM joint and attached to bar joists with screws.
- * 25 gauge, double leg 1/2" resilient channels spaced 16 o.c., double wire tied to the underside of bar joist with 18 gauge tie wire.
- * One (1) layer of 5/8" firecode gypsum board screw attached to resilient channels with 1 5/8" bugle head drywall screws spaced 8" o.c. at the edges and 12 o.c. in the field of the sheets. All screw heads filled and Finnish layer taped and finished with ready mix joint compound.
- * Cavity above gypsum board filled with 3 1/2" fiberglass insulation

Notice: VTEC Laboratories Inc. will not be liable for any loss or damage resulting from the use of the data in this report, in excess of the invoice. This report pertains to the sample tested only. Such report shall not be interpreted to be a warranty, either expressed or implied as to the suitability or fitness of said sample for such uses or applications, as the party contracting for the report may apply such sample.

PROCEDURE:

The furnace measure nominally 5 ft x 5 ft x 7ft. The outside construction is steel and the furnace is lined with a ceramic refractory insulation. Four burners, one centered on each wall provide uniform heat. Each burner is rated for 1.5 million Btu/hr and is of the flat flame or non-impinging flame design. Furnace conditions are monitored by four Inconel-sheathed chromel-alumel thermocouples.

The fire test was run following the ASTM E119 time-temperature curve. The end point for the test is reached when the average of all thermocouples indicate unexposed specimen temperature of 250°F plus ambient, or when a single thermocouple exceeds 325°F plus ambient.

OBSERVATIONS AND RESULTS:

At 3 minutes and 30 seconds, the exposed side of the gypsum board was on fire. At five minutes the flames self extinguished. At 25 minutes some smoke began emitting from the unexposed side of the specimen. At 29 minutes and 20 seconds, the seam on the exposed side began to open. At 47 minutes most of the gypsum board fell off. At 52 minutes and 35 seconds all the fiberglass insulation was burnt and fell off.

At 1 hour and six minutes, the end point was reached on a single thermocouple.

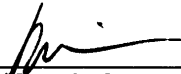
At 1 hour and 12 minutes cracks were seen on the exposed side of the Plycem Cement Board and the furnace was turned off.

The floor specimen met the acceptance criteria for 1 hour as specified in the ASTM E119 procedure.


The time/temperature data are contained on the following pages.

DISCLAIMER:

This test should be used to measure and describe the properties of materials, products or assemblies in response to heat and flame under controlled laboratory conditions and should not be used to describe or appraise the fire hazards or fire risks of materials, products or assemblies under actual fire conditions. However, results of this test may be used as elements of a fire risk assessment, which takes into account all of the factors which are pertinent to an assessment of fire hazard of a particular end use.

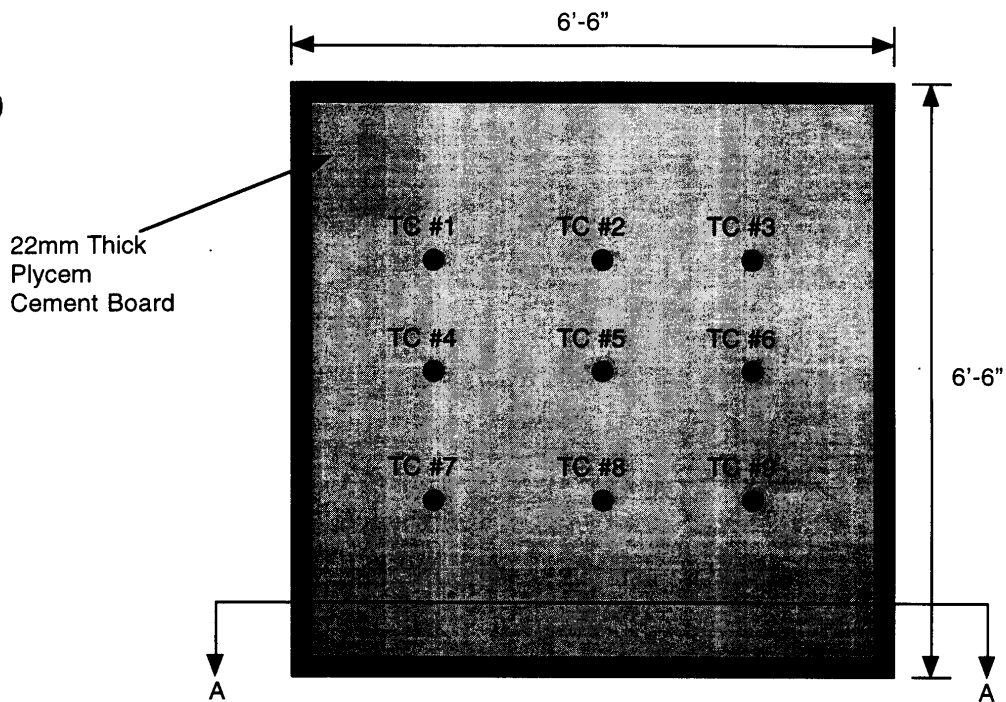

Neil Schultz
Executive Director

VTEC Laboratories., Inc. 100-779-1

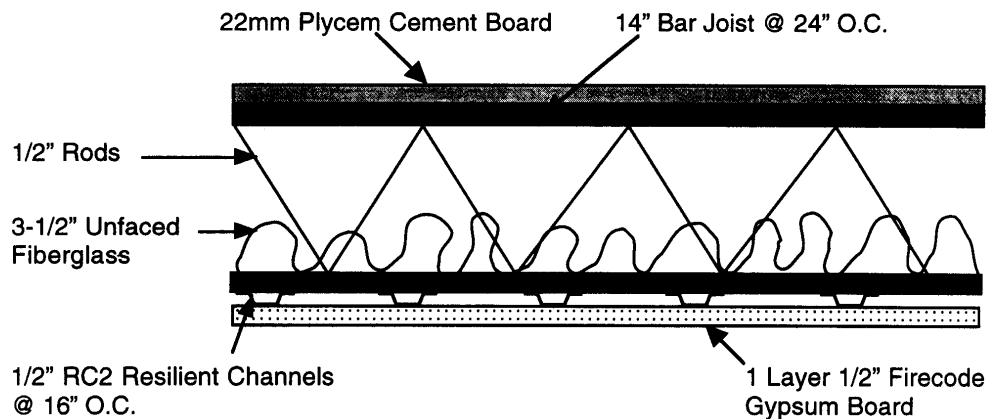

Amirudin Rahim
Technical Director

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**PLAN VIEW OF FLOOR ASSEMBLY #2
UNEXPOSED SIDE**



SECTION A-A

FIGURE 1.0