

FILE 07-06-12
COMMENT 3

Intertek

REPORT NUMBER: 3143206SAT-002 Revision 1
ORIGINAL ISSUE DATE: May 28, 2008
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TEST REPORT

EVALUATION CENTER
Intertek Testing Services NA Inc.
16015 Shady Falls Rd.
Elmendorf, TX 78112

RENDERED TO

StructALL Building Systems
350 Burbank Rd
Oldsmar, FL 34677

PRODUCT EVALUATED: Snap-N-Lock Insulated Panels
EVALUATION PROPERTY: Flame Spread

Report of testing Snap-N-Lock Insulated Panels in a ceiling configuration for compliance with the applicable requirements of the following criteria: UL 1715 Room Fire Test.

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1 Table of Contents

INTRODUCTION	3
TEST SAMPLES	3
TESTING AND EVALUATION METHODS	3
TESTING AND EVALUATION RESULTS	5
CONCLUSIONS	6
APPENDICES	
Appendix A: DATA	7
Appendix B: PHOTOGRAPHS	11
Appendix C: TRACABILITY	16
LAST PAGE	19

2 Introduction

Intertek Testing Services NA (Intertek) has conducted testing for StructALL Building Systems, Inc., on Snap-N-Lock Insulated Panels, to evaluate flame spread properties under real scale room fire conditions. Testing was conducted in accordance with UL 1715 Room Fire Test. This evaluation was conducted on May 23, 2008.

3 Test Samples

3.1. SAMPLE SELECTION

Samples were submitted to Intertek directly from the client and received the day of the installation. The specimens were marked and the marks verified by Terrapin Testing. For additional details, see the letter and photographs in Appendix C.

3.2. SAMPLE AND ASSEMBLY DESCRIPTION

The product was tested in a ceiling only configuration.

The specimen tested consisted of three white EPS core panels. Each panel was 6 inches thick and had a 0.024 inch aluminum skin on both sides with a finish described as "stucco." The finished dimensions of the three panels combined as a single piece was 9' x 10'. The panels were held together as a single unit by channel on four sides beyond the area exposed to flame.

The four walls of the test room were composed of one layer of 5/8 in. thick gypsum wallboard to form an interior volume 8'x8'x12' as specified in the standard. The single ceiling panel rested on the tops of the walls and sealed with a layer of ceramic blanket around the top of the walls. The exposed ceiling area was 8 feet wide as defined by the left and right side walls. The panel length was longer than the 8 feet required for the test. To accommodate this, an imaginary flame spread extremity was established 8 feet from the back wall.

The two seams of the component panels ran perpendicular to the long dimension of the room. The first seam was 43 inches from the back wall. The second seam was 48 inches away from the first seam and still within the 8' flame spread limit.

4 Testing and Evaluation Methods

INTRODUCTION

This report presents the results of an investigation of a room corner fire test conducted according to UL 1715 Room Fire Test Standard of Interior Finish Material. This document contains a description of the material evaluated, procedures used, and the test results. Note that the results listed apply only to the specimens tested, in the manner tested, and not to the entire production of this or similar materials, nor to the performance of this material when used in combination with other materials.

PROCEDURE

The standard test facility consists of an 8 ft. wide by 12 ft. long by 8 ft. high room with walls and ceiling and a doorway 2-1/2 ft. wide and 7 ft. high centered in one of the 8 ft. walls. All vertical or horizontal joint details must be representative of those intended for use in field conditions. The remainder of the interior of the room is constructed of 5/8 in. gypsum wallboard screwed to 2 x 4 metal studs (1 1/2 in. x 3 5/8 in.). The test structure is located inside of a building free of excessive drafts.

The fuel source is a wood crib constructed of 1.5 in. x 1.5 in. sticks of Spruce Pine Fir cut to 15-in. lengths. The crib must have a dry wood weight of 30 lbs. and be 15 in. square in plan. One 8d nail is driven at each intersection of two sticks. The crib is assembled in tiers of five sticks each with each tier oriented 90 degrees to the sticks in the adjacent tiers.

The crib is placed on four brick pieces, one under each corner of the crib, to provide not less than a 3-in. space between the floor and the lower surface of the crib. Ignition of the crib is accomplished by evenly distributing 1 lb. of shredded and fluffed wood excelsior beneath the crib over a 21 in. x 21 in. area and soaking with 4 oz. of 95% ethyl alcohol.

Four Type K, Chromel-Alumel thermocouples as per UL 1715 were utilized for measurement of the crib fire temperatures in the test room (TC 2, 3, 4, 5). These thermocouples were placed 60 in., 36 in., 12 in., 1 in., below the ceiling respectively. Thermocouples were placed 1 in. below the center of the ceiling specimen, and 1 in. below the doorway opening. A thermocouple was placed 4 ft from the specimen corner 3 in. from the LHS wall and 1 in. below the ceiling. A thermocouple was placed 8 ft from the specimen corner 3 in. from the LHS wall and 1 in. below the ceiling. A thermocouple was placed 4 ft from the specimen corner 3 in. from the LHS wall and 3 ft. below the ceiling. Documentation of the test consists of color videotape, and thermocouple data. Temperature readings on all thermocouples are taken prior to the start of the test and continued at 15-second intervals to the completion of the fire exposure.

TEST CRITERIA

During the test, the test specimen shall not project flame through the doorway opening at any time, and flames shall not extend to the extremities of the specimen. The char pattern shall show a decreasing char layer as measured from the fire source to the extremities.

TEST STANDARD

UL 1715 Room Fire Test

5 Testing and Evaluation Results

RESULTS AND OBSERVATIONS

The test material was installed on May 22, 2008. The test was started at 9:45 am on May 23, 2008. The ambient temperature was 72°F with a relative humidity of 23%. The thermocouples were positioned in accordance with the standard, and their outputs verified after connection to the data acquisition system. Critical events during the course of the test are described below.

TIME	OBSERVATION
0:00	Ignition of the excelsior
1:25	The flame tips reached the second probe
2:50	The flame tips reached the third probe
3:45	The flame tips reached the ceiling
4:10	The aluminum skin began to bulge
4:15	The panel skin began to discolor
4:45	The second panel began to warp on the left side
5:00	The panel nearest the door (third) began to warp
5:30	The area impinged by the crib flames continued to discolor
7:30	The gypsum paper on the walls began to flake
9:30	No change
12:30	The non-fire side of the panels began to smoke and bow slightly inward
14:00	The smoke on the non-fire side began to increase
15:00	Test terminated. No ignition of sample.

Post Test Observations:

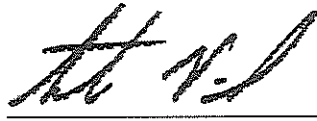
After the test, the test room was allowed to cool and the following observations were made: Specimen was discolored and misshapen in the corner area impinged by the crib fire. Other areas adjacent to the walls bordering the corner with the crib were wrinkled and discolored. For additional information, see the post test photographs in Appendix B.

6 Conclusion

The samples submitted, and tested as described in this report met the requirements of the UL 1715 Acceptance Criteria.

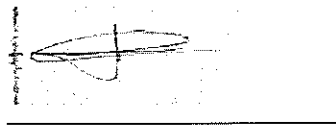
INTERTEK TESTING SERVICES NA

Reported by:



C. Anthony Peñaloza
Flammability Testing Team Leader, Building Products

Reviewed by:



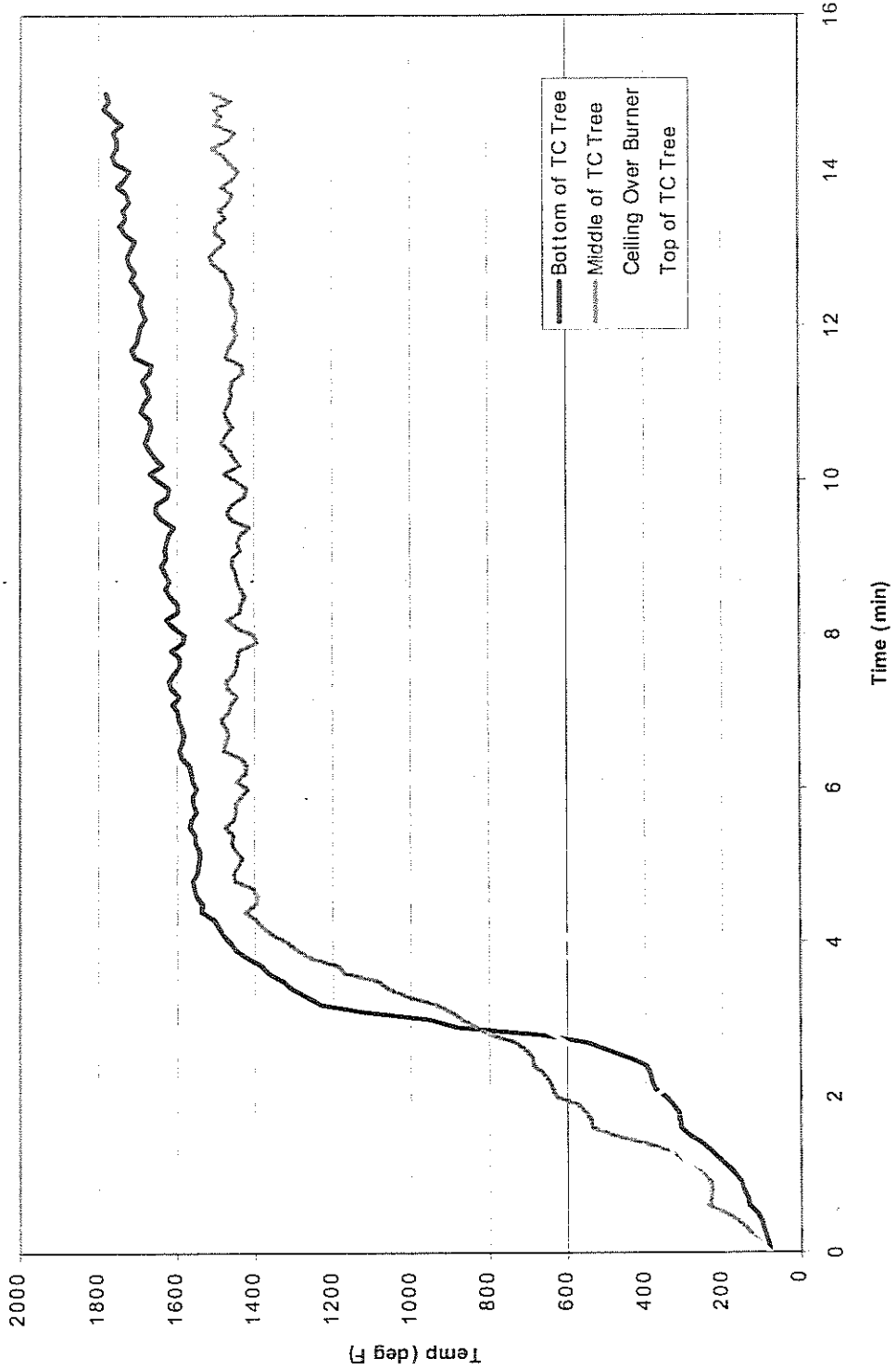
Javier Trevino
Senior Project Engineer

APPENDIX A

Test Data.

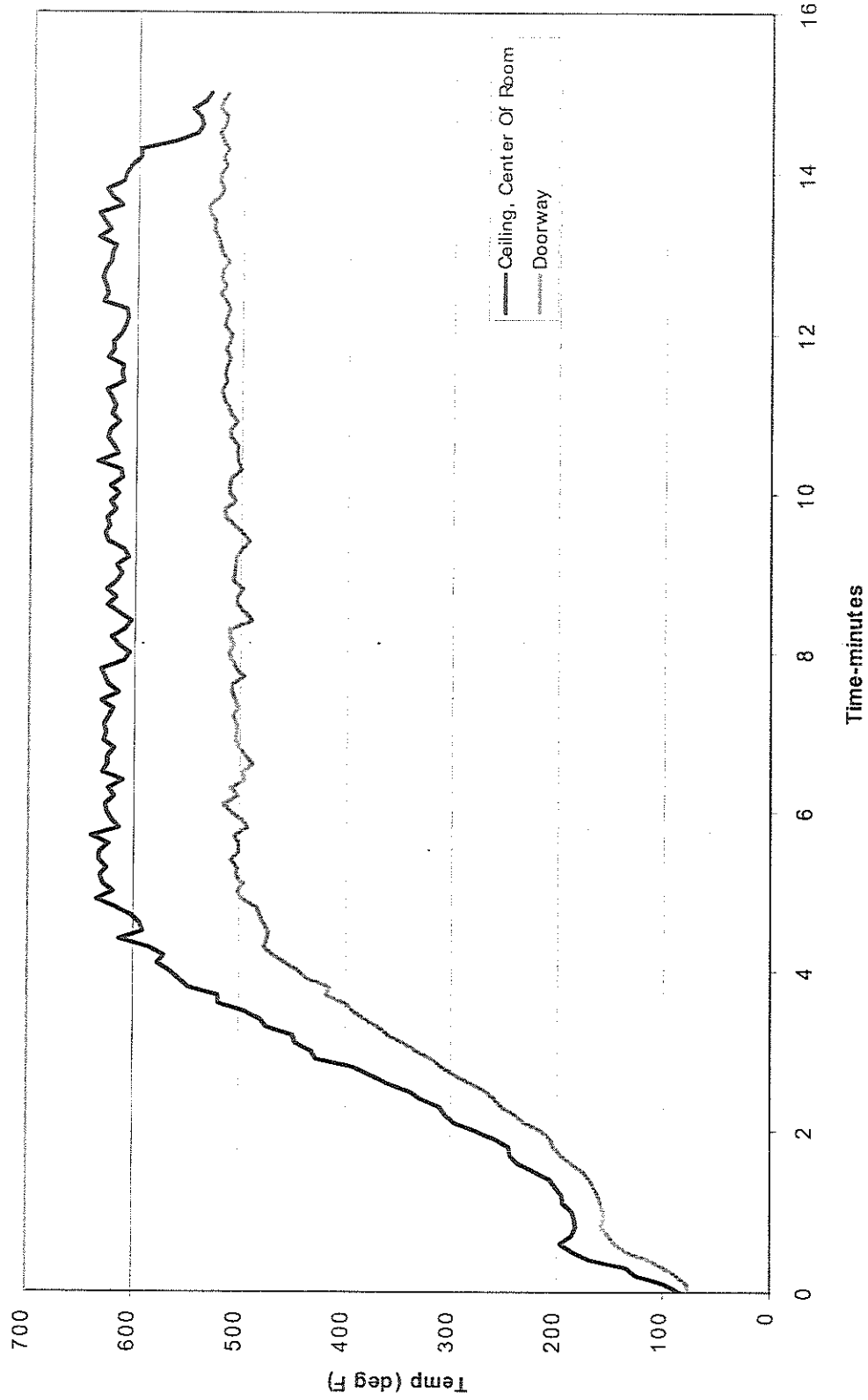
Corner Temperatures

(high start temperature is residual heat from a previous test)



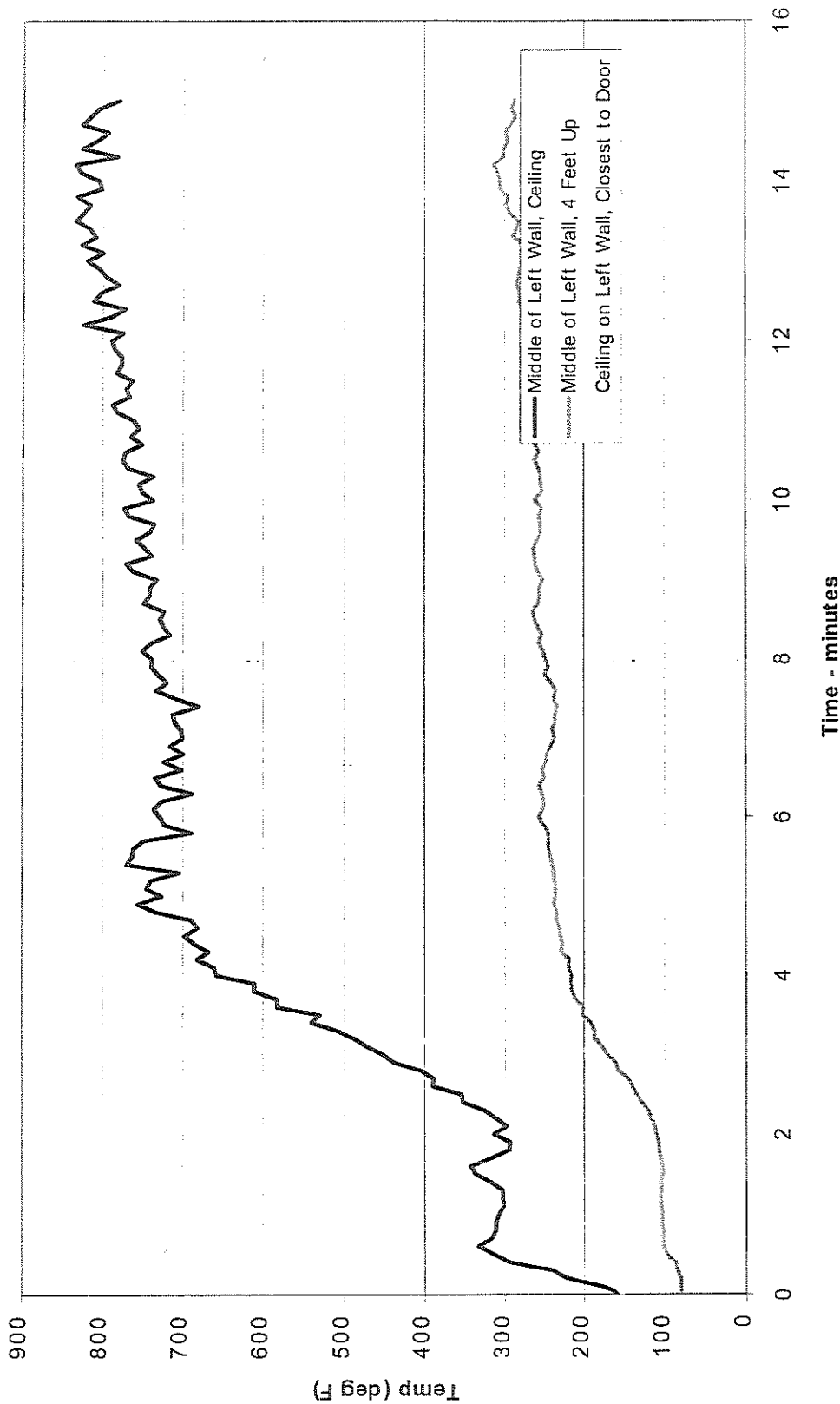
Ceiling and Door Temperatures

(high start temperature is residual heat from a previous test)



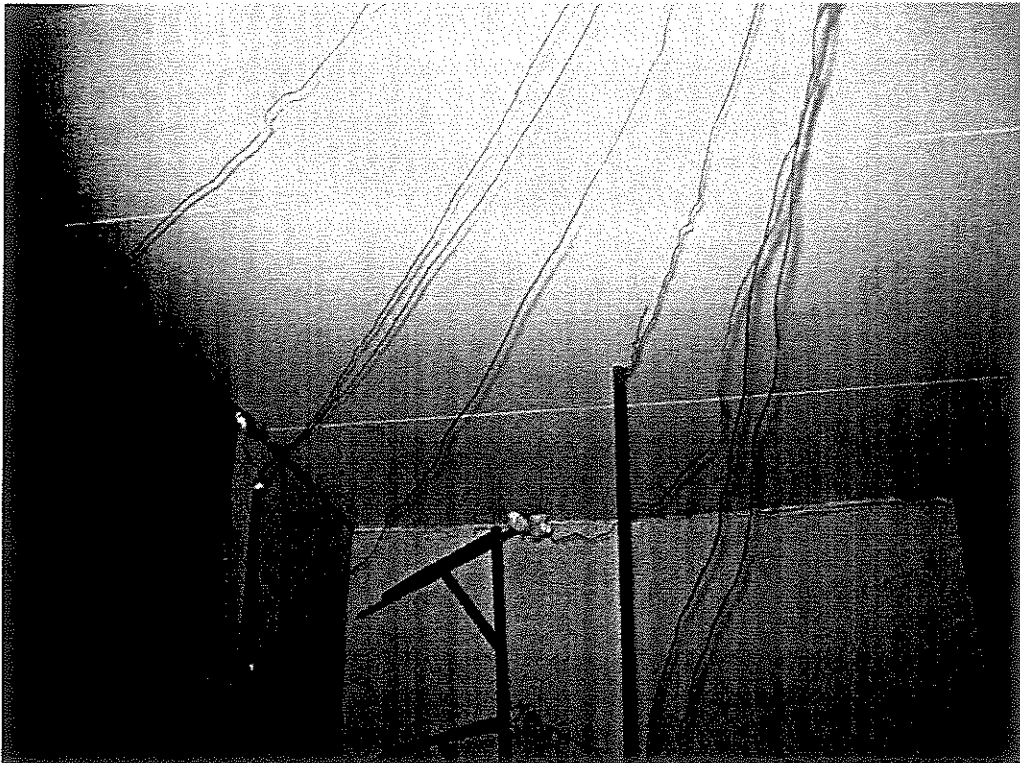
Wall Temperatures

(high start temperature is residual heat from a previous test)



APPENDIX B

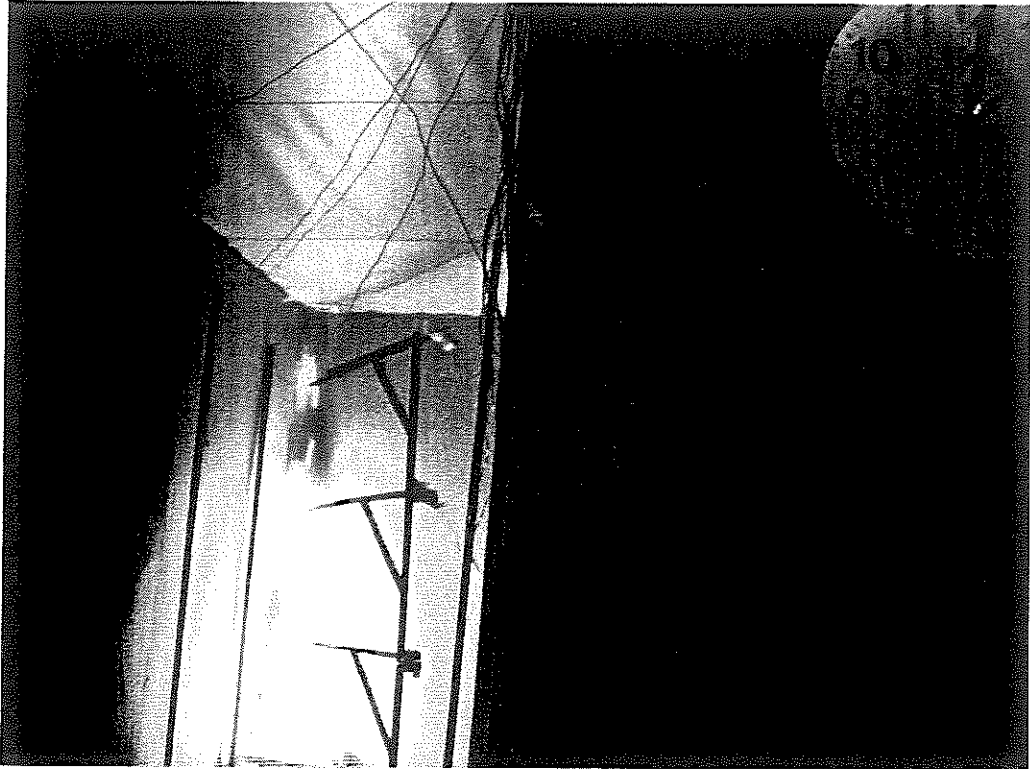
Photographs



Pre-test photo



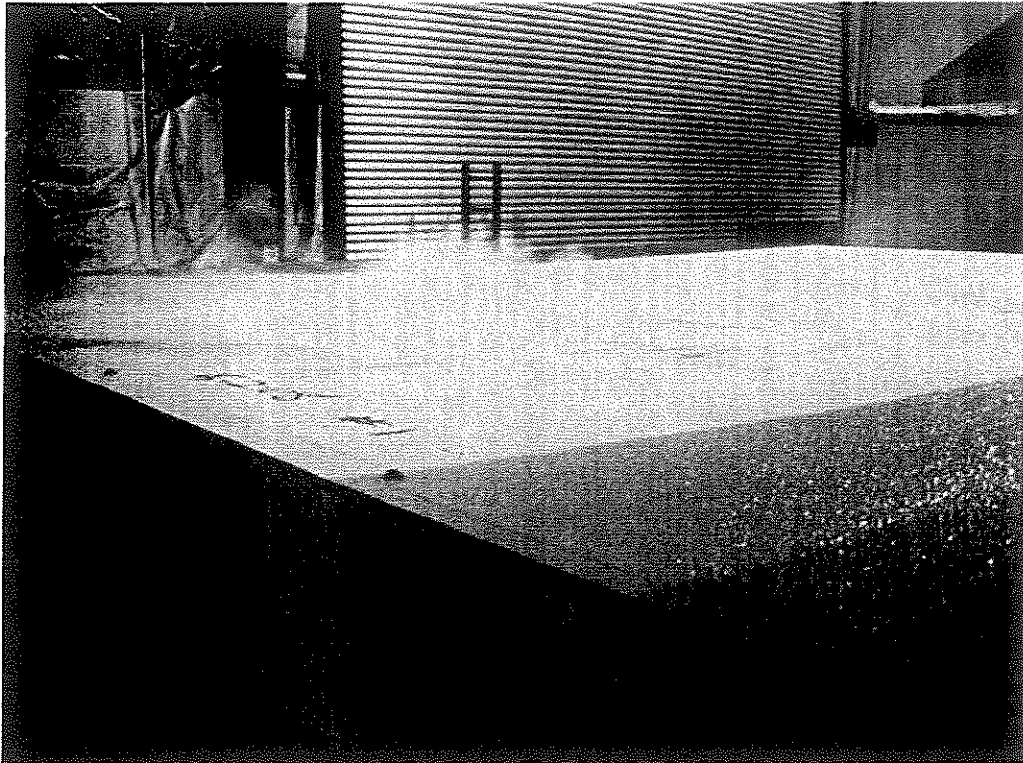
Start of Test



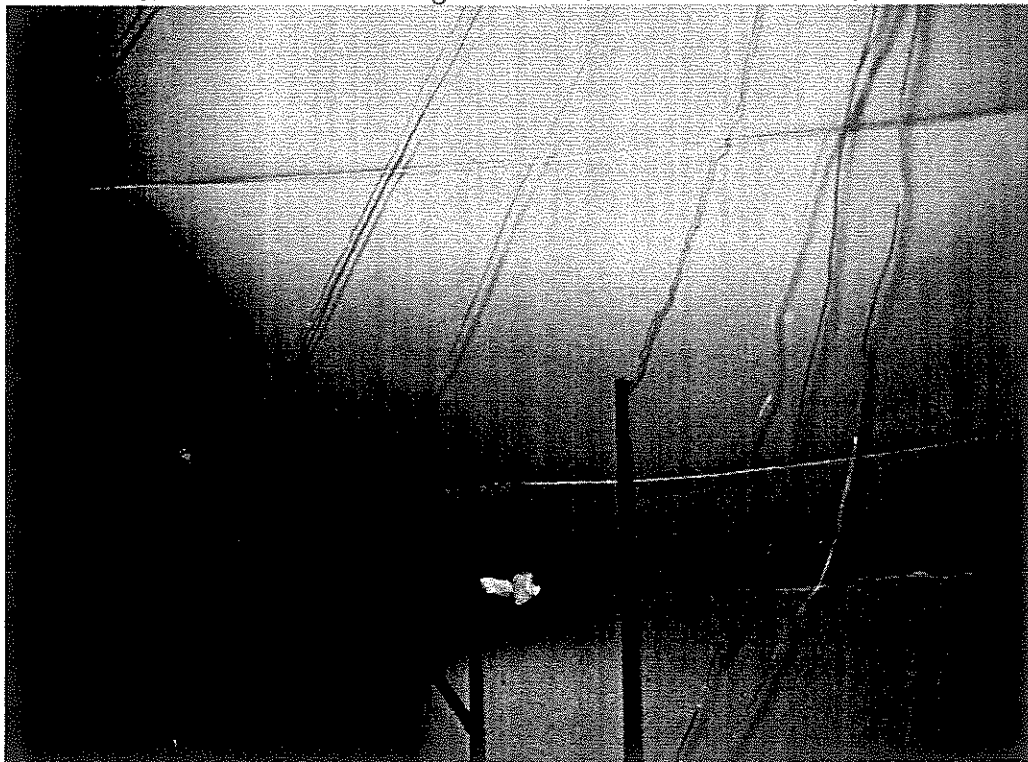
Test photo



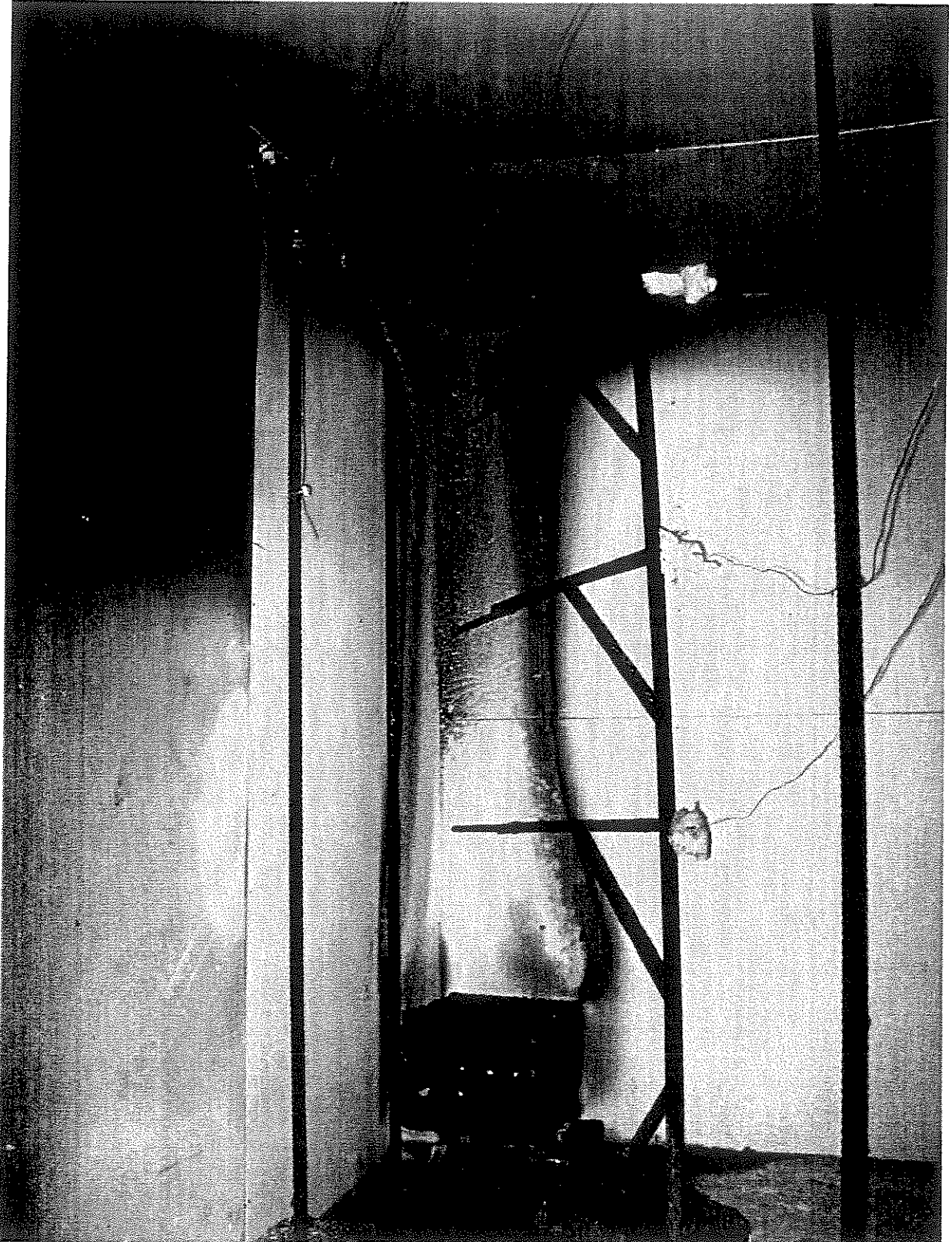
Discoloration on panels



Smoking from the back side



Post-Test photo



Post-test photo of full corner

APPENDIX C
Traceability



terrapintesting

you build it. we'll break it.

May 2, 2008

Ms. Scott Kimbrell
Structall Building Systems, Inc.
350 Burbank Road
Ocala, Florida 34677

Re: Test Panels Witnessed

Dear Scott,

On May 2, 2008, I witnessed the manufacture of structural insulated panels, at the Ocala, Florida location of Structall Building Systems, Inc. These panels are to be tested by a lab acceptable to ICC-ES, in order to verify they meet the requirements of Section 3.6.2 of Acceptance Criteria AC108. The components used are as follows:

- Skin(s):** 0.024-inch aluminum; 3102-11254 alloy and temper
- Adhesive:** Rohm and Haas Company, MorAd # 842 recognized by ICC-ES in ESR-1003
- Core:** Type I, 1.0 # of Expanded Polystyrene; Imperial Foam with RADCO Lath
- Thickness:** 6-inch thick panels

The spread rate of the adhesive was 12-13 grams per square foot, while the spread rate for water was 2-3 grams per square foot. Both sides of the foam core were coated with adhesive and water. This production complies with the current version of their Quality Control Manual. During the lamination process, the panels were marked with a permanent marker, for identification by your lab personnel.

These panels have been subjected to a test program with our Lab, Terrapin Testing, Inc., T1-159, and have been submitted to ICC-ES for recognition under an Evaluation Report. Your test report is required by ICC-ES for their evaluation.

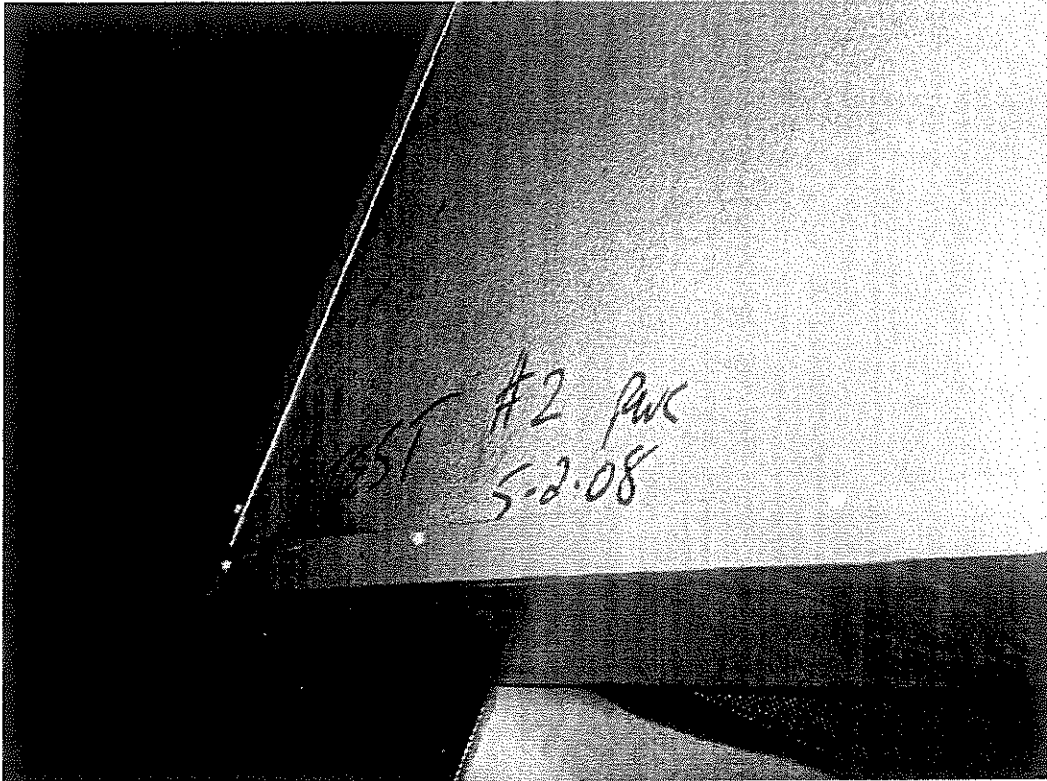
Please do not hesitate to call if I can assist you further.

Yours very truly,

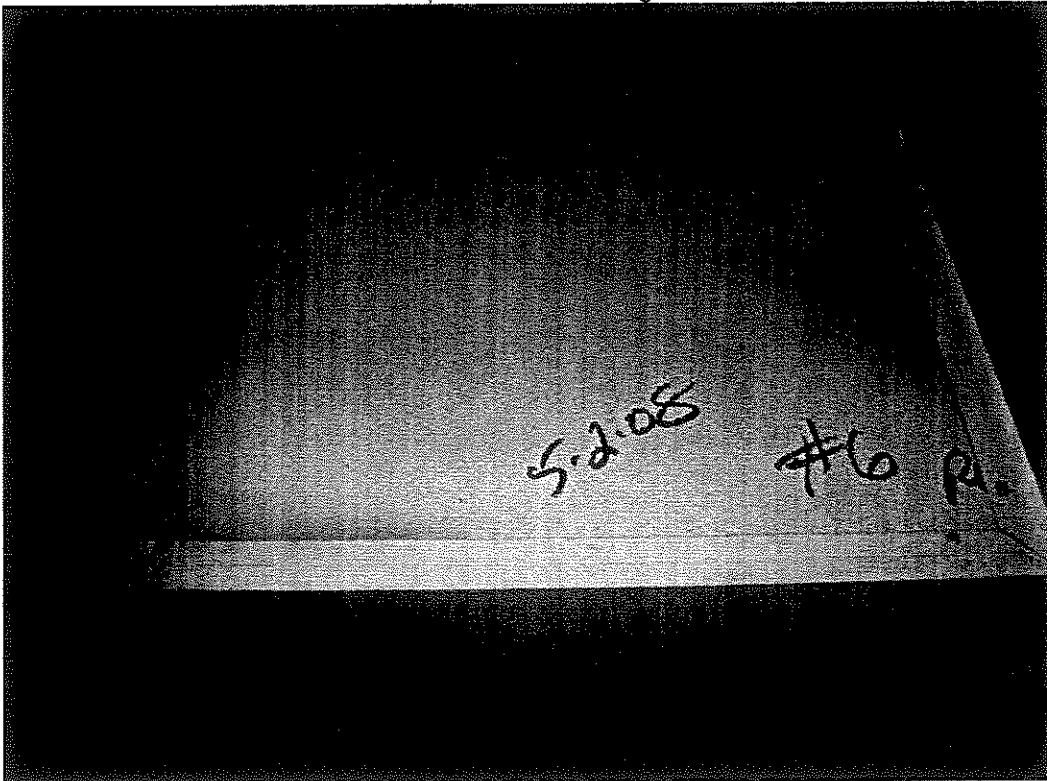
Rick Cavanagh

RC

Terrapin Testing, Inc.
10775 E. 1st Ave.
Palmdale, California 93550-1000



Inspector's markings



Inspector's markings

LAST PAGE OF TEST REPORT

REVISION SUMMARY

DATE	SUMMARY
5/28/2008	First issue. No revisions.
9/3/2008	Added product sampling and traceability information to sample description, photographs, and Appendix C.

