



1341 N. 108th East Avenue
Tulsa, Oklahoma 74116

REPORT OF TEST

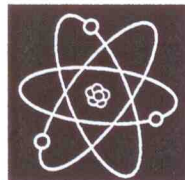
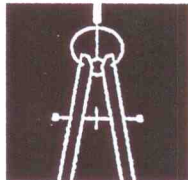
Test Procedure: *UL 1715 - Fire Test of Interior
Finish Material*

Test Date: *6/24/99*

Department: *Engineering and Fire Technology*

Prepared for: *Illbruck, Inc.
3800 Washington Ave. North
Minneapolis, MN 55412*

Attention: *Stan Alexander*





SGS U.S. Testing Company Inc.

1341 North 108th East Avenue

Tulsa, OK 74116

Tel: 918-437-8333

Fax: 918-437-8487

Report No.: 126659

Date: 7/6/99

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REPORT OF TEST

CLIENT: Illbruck, Inc.
3800 Washington Ave North
Minneapolis, MN 55412

Attn.: Stan Alexander

SUBJECT: Testing Flammability to UL 1715, Fire Test of Interior Finish Material.

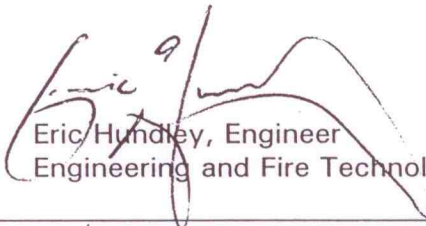
SAMPLE ID: Client refers to samples received as "Sonex One". Our client Purchase Order #8824, for reference. Twenty-four samples of 2 x 4 ft material were used during the testing procedure. These samples were received on 6/2/99 in good condition from the client.

TEST DATE: 6/21/99 - 6/24/99.

PROCEDURE: UL 1715, Fire Test of Interior Finish Material. This standard provides a procedure for the design and control of the method. This was the procedure used to generate this report and data obtained from the test. Installation of the sample was specified as by the manufacturer's instructions, using Liquid Nails Brand Adhesive - LN-910 Paneling and Molding Adhesive. No revisions of this report will be allowed after 90 days of the original report issue.


RESULTS: This material "Sonex One" meets the requirements set forth by UL 1715 Fire Test of Interior Finish Material as mentioned in Section 3, Performance, Subsections 3.2 and 3.3.

CERTIFICATION: The testing was performed under the complete supervision of SGS U.S. Testing Company Inc. SGS U.S. Testing Company Inc. is a recognized and accredited Testing Laboratory.


Eric Hundley, Engineer
Engineering and Fire Technology Dept.

Bk

Member of the SGS Group

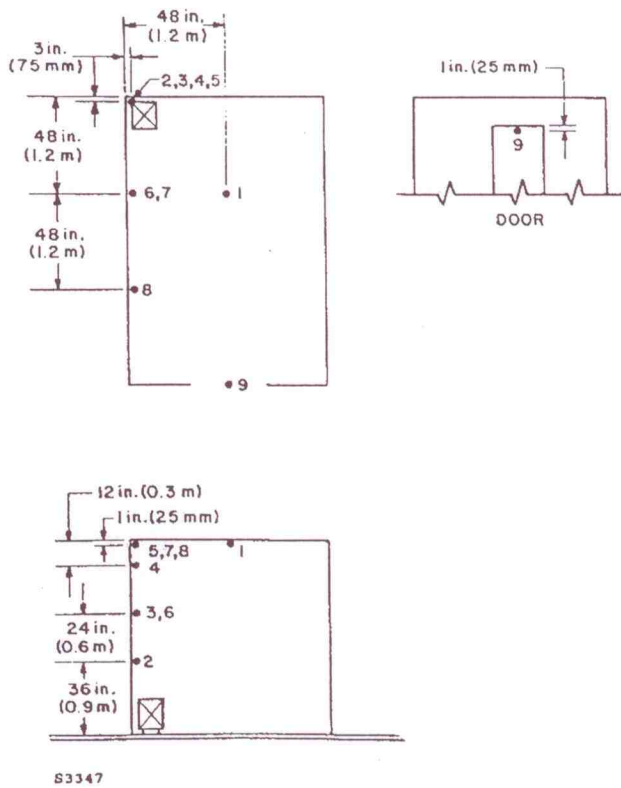
Signed for the Company

Dale E. Holloway
Tulsa Branch Director

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RESULTS :

Temperatures	616 °F (Thermocouple #9)	Maximum allowed: N/A
	268 °F (Thermocouple #6)	Maximum allowed: N/A
	1644 °F (Thermocouple #3)	Maximum allowed: N/A
	1659 °F (Thermocouple #2)	Maximum allowed: N/A
	498 °F (Thermocouple #8)	Maximum allowed: N/A
	642 °F (Thermocouple #1)	Maximum allowed: N/A
	878 °F (Thermocouple #7)	Maximum allowed: N/A
	1337 °F (Thermocouple #5)	Maximum allowed: N/A
	1359 °F (Thermocouple #4)	Maximum allowed: N/A

**FIGURE 9.1
THERMOCOUPLE LOCATIONS**



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RESULTS Cont'd.

Visuals (during testing):

- 0:00:00 – Ignition of crib
- 0:00:10 – Flaming of material reached ceiling – Flame front did not continue to the horizontal wall and ceiling seams
- 0:01:30 – White smoke generated by material covering 6 ft level
- 0:02:15 – First signs of significant charring of material
- 0:03:25 – Ceiling material (above crib) penetrated by flame
- 0:04:20 – Smoke significantly reduced in room (burning of material had minimized)
- 0:10:00 – Charring is ranging within 2 feet on both walls of the vertical corner (adjacent to the crib location)
- 0:10:15 – Sample shows signs of adhesion failure due to elevated temperatures
- 0:15:10 – Testing was stopped (extinguished)

Flame Spread Visuals: *(See video)*

Flaming nor charring did not extend to the past the sample material

Measurements of Charring: *(See photos 3, 4)*

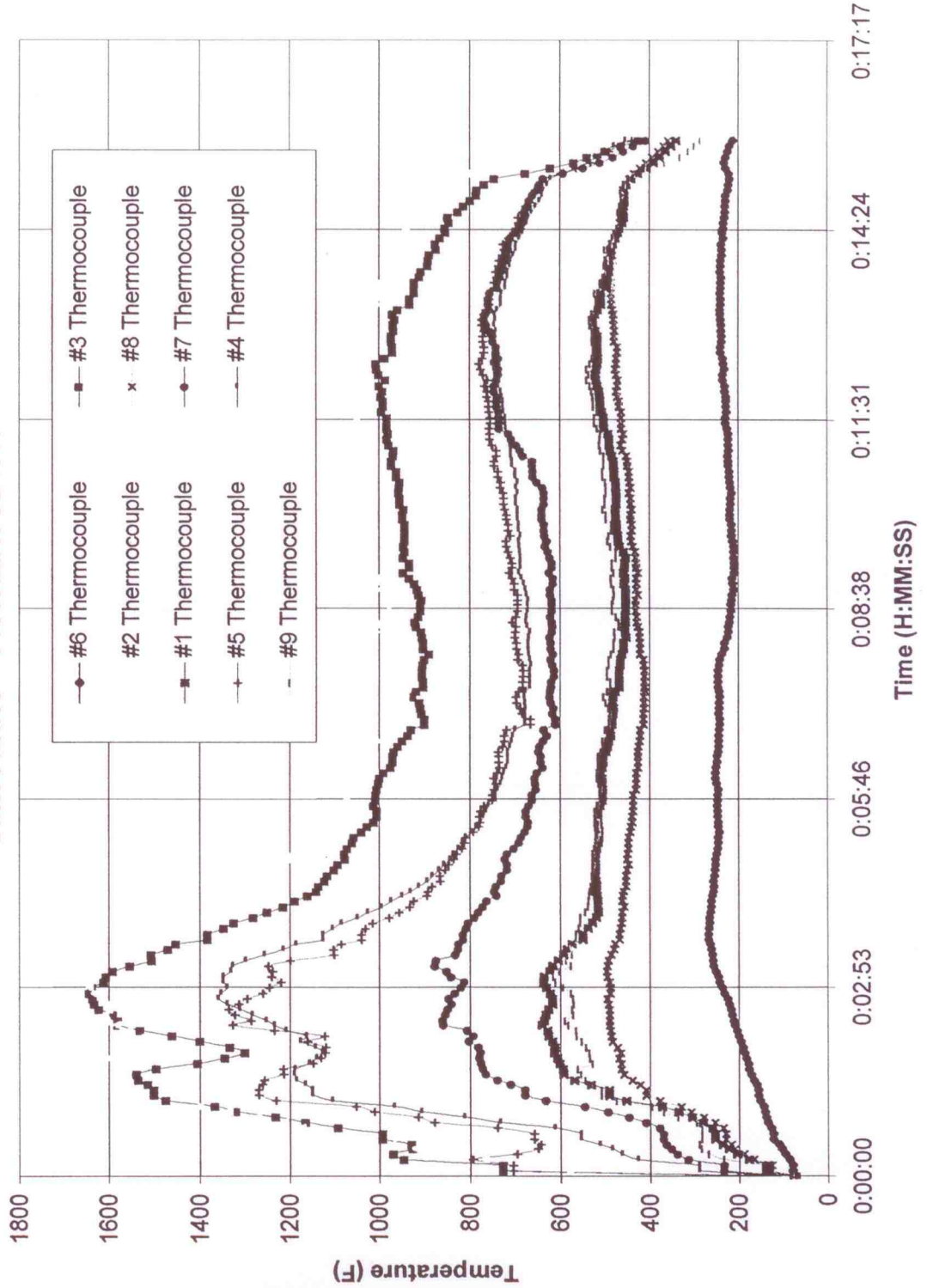
- * Along 12 ft wall – 6 ft 3 in
- * Along 8 ft wall – 6 ft 7 in
- * Diagonal across ceiling (from corner) – 5 ft 7 in

Notes:

Flaming was not seen along the ceiling edges joining the wall sections. The charring of the material was viewed as an effect of the extreme temperature experienced in the test room. All measurements of charring were taken at the farthest visible charred location. The temperature estimated for charring of the material is approximately 650 °F to 700 °F.

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Temperature Vs. Time
Client: Illbruck, Inc. Job# 126659
Date: 6/24/99 Procedure: UL 1715



PHOTOS:



PHOTO 1. Photo of Installation of 'Sonex-One'

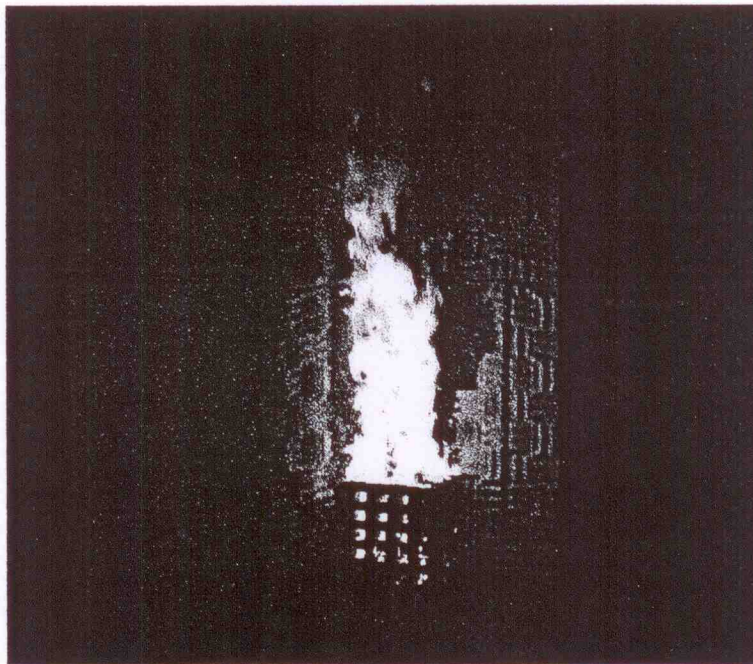


PHOTO 2. Maximum Involvement of Crib

PHOTOS Cont'd.:

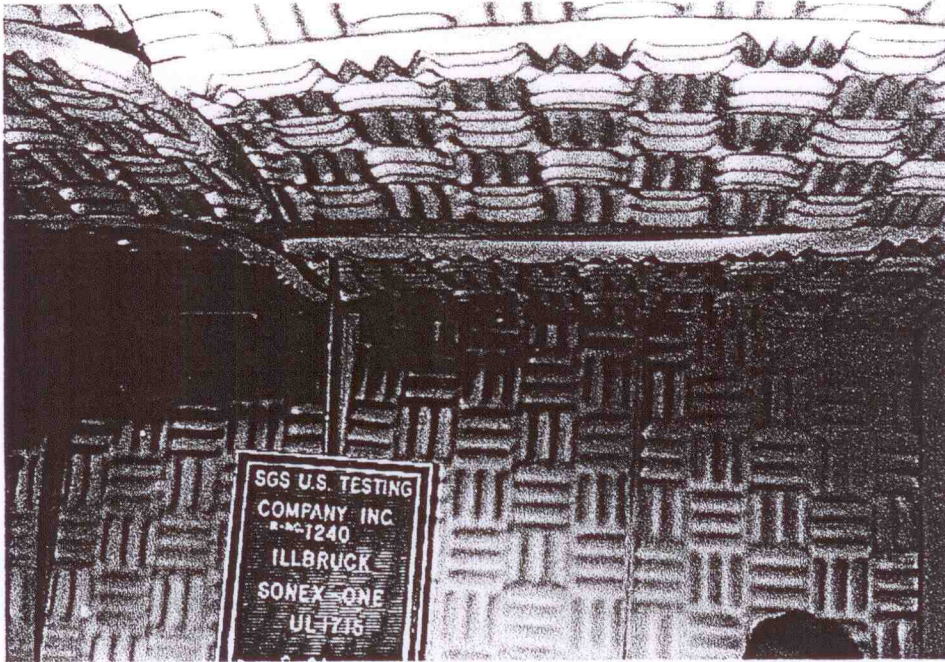


PHOTO 3. 8 ft Wall Charring

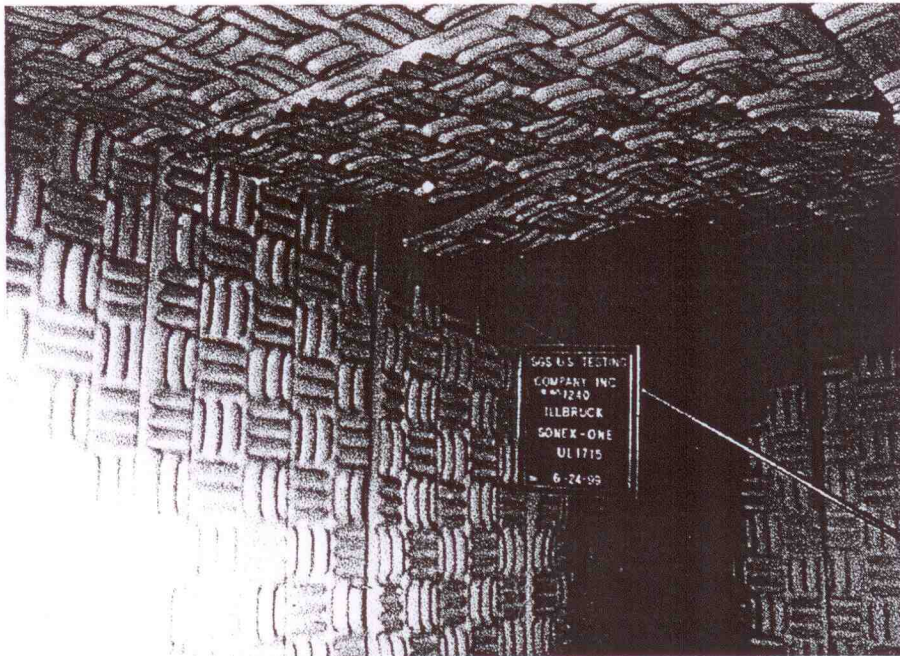


PHOTO 4. 12 ft Wall Charring

PHOTOS Cont'd.

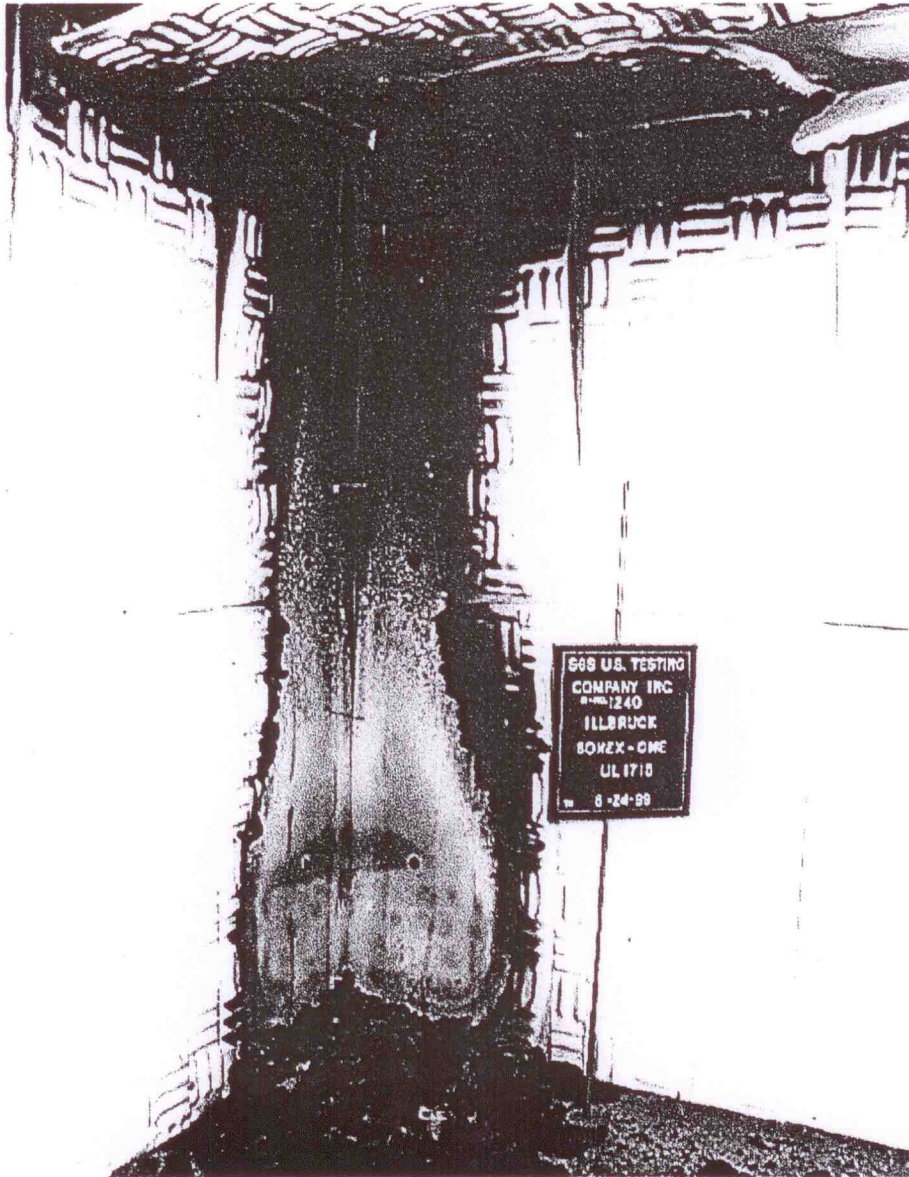


PHOTO 5. Sonex-One after UL 1715 Fire Test

END OF REPORT

REPORT OF TEST