

# RIVERBANK ACOUSTICAL LABORATORIES

1512 S. BATAVIA AVENUE  
GENEVA, ILLINOIS 60134

Alion Science and Technology

630/232-0104  
FOUNDED 1918 BY  
WALLACE CLEMENT SABINE

## TEST REPORT

FOR: Auralex Acoustics, Inc.  
Indianapolis, IN

Sound Absorption Test  
RAL™-A89-60

ON: ProPanel™ 2"

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CONDUCTED: 30 May 1989

### TEST METHOD

The test method conformed explicitly with the requirements of the ASTM Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method: ASTM C423-84a and E795-83. Riverbank Acoustical Laboratories has been accredited by the U.S. Department of Commerce, National Bureau of Standards under the National Voluntary Laboratory Accreditation Program (NVLAP) for this test procedure. A description of the measuring technique is available separately. The microphone used was a Bruel & Kjaer serial number 1330828.

### DESCRIPTION OF THE SPECIMEN

The test specimen was designated by the manufacturer as ProPanel 2". The overall dimensions of the specimen as measured were 2.44 m (96 in.) wide by 2.74 m (108 in.) long and 5.1 cm (2 in.) thick. Each panel as measured was 1.22 m (48 in.) wide by 2.74 m (108 in.) long. The specimen was tested in the laboratory's 292 m<sup>3</sup> (10,311 ft<sup>3</sup>) test chamber. The description of the specimen was as follows: Each baffle was rigid fiberglass covered on the face and edges with Guilford 2100 fabric. A visual inspection verified the description of the specimen. The total weight of the specimen as measured was 35.8 kg (79 lbs) an average of 5.4 kg/m<sup>2</sup> (1.1 lbs/ft<sup>2</sup>). The area used in the calculations was 6.69 m<sup>2</sup> (72 ft<sup>2</sup>). The room temperature at the time of the test was 23°C (73°F) and 57% relative humidity.

### PRECONDITIONING

The specimen was held at least 48 hours under the test conditions of 22°C (72°F) and 60% relative humidity.

### MOUNTING A

The test specimen was laid directly against the test surface.

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THE RESULTS REPORTED ABOVE APPLY ONLY TO THE SPECIFIC SAMPLE SUBMITTED FOR MEASUREMENT. NO RESPONSIBILITY IS ASSUMED FOR PERFORMANCE OF ANY OTHER SPECIMEN.

NVLAP

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### TEST RESULTS

| 1/3 Octave Center<br>Center Frequency<br>(Hz) | Absorption<br>Coefficient | Total Absorption<br>In Sabins | % Of Uncertainty<br>With 95%<br>Confidence Limit |
|---|---------------------------|-------------------------------|--|
| 100   | 0.28                      | 19.80                         | 0.78   |
| ** 125  | 0.42                      | 30.37                         | 0.52   |
| 160   | 0.41                      | 29.17                         | 0.60   |
| 200   | 0.66                      | 47.29                         | 0.57   |
| ** 250  | 0.89                      | 64.29                         | 0.49   |
| 315   | 0.99                      | 71.24                         | 0.54   |
| 400   | 0.98                      | 70.73                         | 0.50   |
| ** 500  | 1.12                      | 80.99                         | 0.60   |
| 630   | 1.12                      | 80.97                         | 0.55   |
| 800   | 1.11                      | 79.92                         | 0.58   |
| ** 1000                                       | 1.07                      | 77.27                         | 0.55   |
| 1250  | 1.10                      | 78.96                         | 0.55   |
| 1600  | 1.09                      | 78.30                         | 0.58   |
| ** 2000                                       | 1.10                      | 79.45                         | 0.63   |
| 2500  | 1.12                      | 80.41                         | 0.58   |
| 3150  | 1.10                      | 78.96                         | 0.48   |
| ** 4000                                       | 1.09                      | 78.77                         | 0.55   |
| 5000  | 1.12                      | 80.50                         | 0.53   |

NRC = 1.05

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### TEST RESULTS (Continued)

The percentage of uncertainty for the required 95% confidence limits indicated above must fall within the prescribed limits designated in par. 13.2 of ASTM C423-84a. It states that for the absorption of the reverberation room containing the specimen the testing laboratory shall obtain data with less than 4% uncertainty at 125 (hertz) and 2% uncertainty at 250, 500, 1000, 2000, and 4000 (hertz). The method of calculation is described in ASTM STP 15D and outlined in section 13 of the standard.

The noise reduction coefficient (NRC) is the average of the coefficients at 250, 500, 1000, and 2000Hz, expressed to the nearest integral multiple of 0.05.

Submitted by Peter E. Straus  
Peter E. Straus  
Senior Technician

Reviewed by John W. Kopec  
John W. Kopec  
Supervisor, Riverbank  
Acoustical Laboratories

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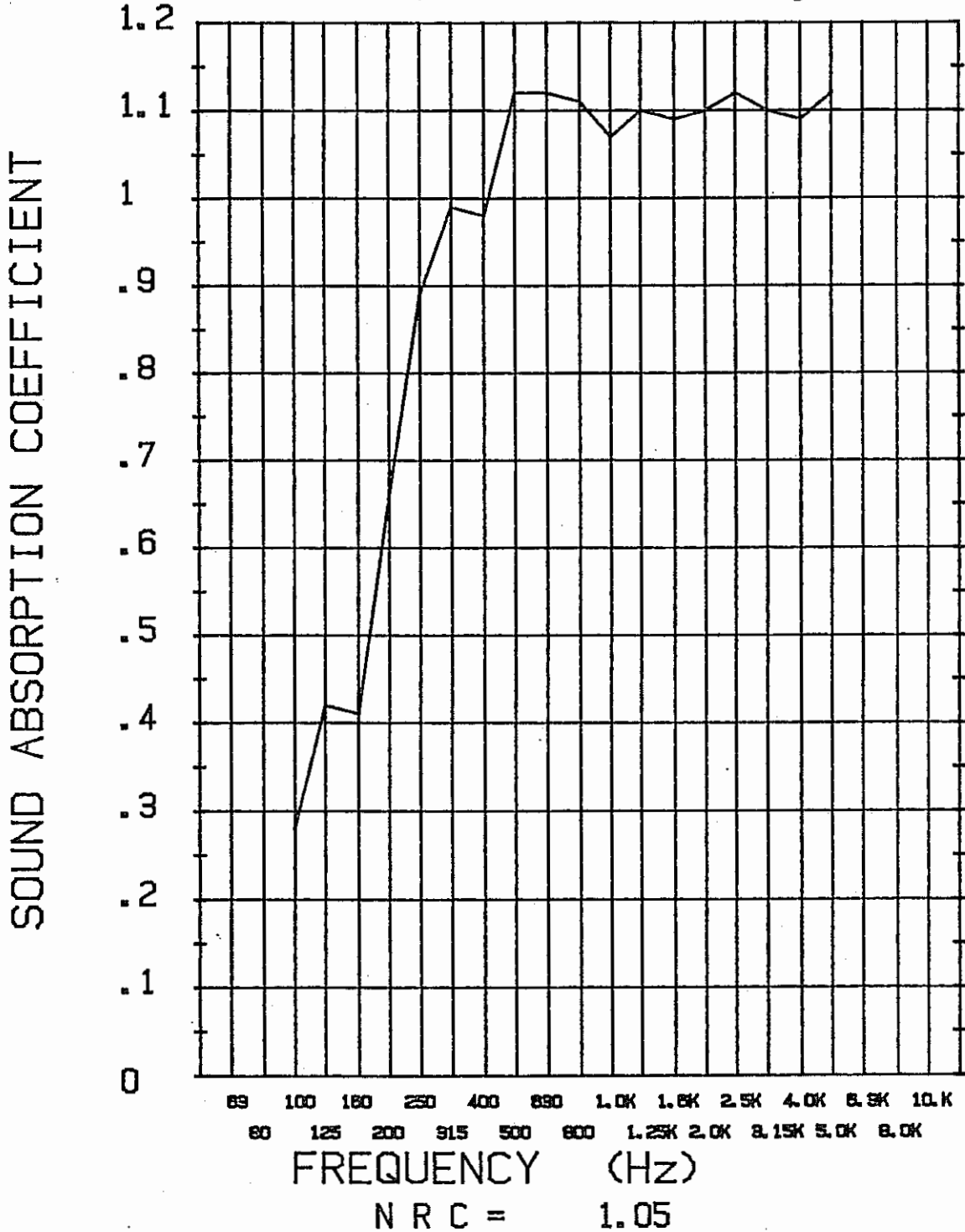
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**TEST REPORT**

**SOUND ABSORPTION REPORT**  
**RAL-A89-60**



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