

# RIVERBANK ACOUSTICAL LABORATORIES

1512 S. BATAVIA AVENUE  
GENEVA, ILLINOIS 60134

OF  
IIT RESEARCH INSTITUTE

630/232-0104  
FOUNDED 1918 BY  
WALLACE CLEMENT SABINE

## TEST REPORT

FOR: Panelfold®, Inc.

Sound Absorption Test  
Test RAL™-A99-158

ON: Fabric Wrapped Acoustic Panels  
With 3 PCF Fiberglass

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CONDUCTED: 28 October 1999

### 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 C423-90a and E795-93. Riverbank Acoustical Laboratories has been accredited by the U.S. Department of Commerce, National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP) for this test procedure. A description of the measuring technique is available separately.

### DESCRIPTION OF THE SPECIMEN

The test specimen was designated as fabric wrapped acoustic panels with 3 pcf fiberglass insulation. The overall dimensions of the specimen were 2.45 m (96.5 in.) wide by 2.74 m (108 in.) long and 32 mm (1.25 in.) thick. The specimen consisted of two panels that measured 1.23 m (48.25 in.) wide by 2.74 m (108 in.) long. The panels were butted firmly together to form the overall test specimen. 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: Both panels consisted of a 25 mm (1 in.) thick, 3 pcf density fiberglass core contained in a steel angle perimeter frame with a 6.4 mm (0.25 in.) thick hardboard backer. The panels were face and edge wrapped in fabric. The weight of the entire specimen as measured was 57 kg (125.5 lbs), an average of 8.5 kg/m<sup>2</sup> (1.7 lbs/ft<sup>2</sup>). The area used in the calculations was 6.7 m<sup>2</sup> (72 ft<sup>2</sup>). The room temperature at the time of the test was 22 C (72 F) and 57% relative humidity.

### Mounting A

The test specimen was laid directly against the test surface.

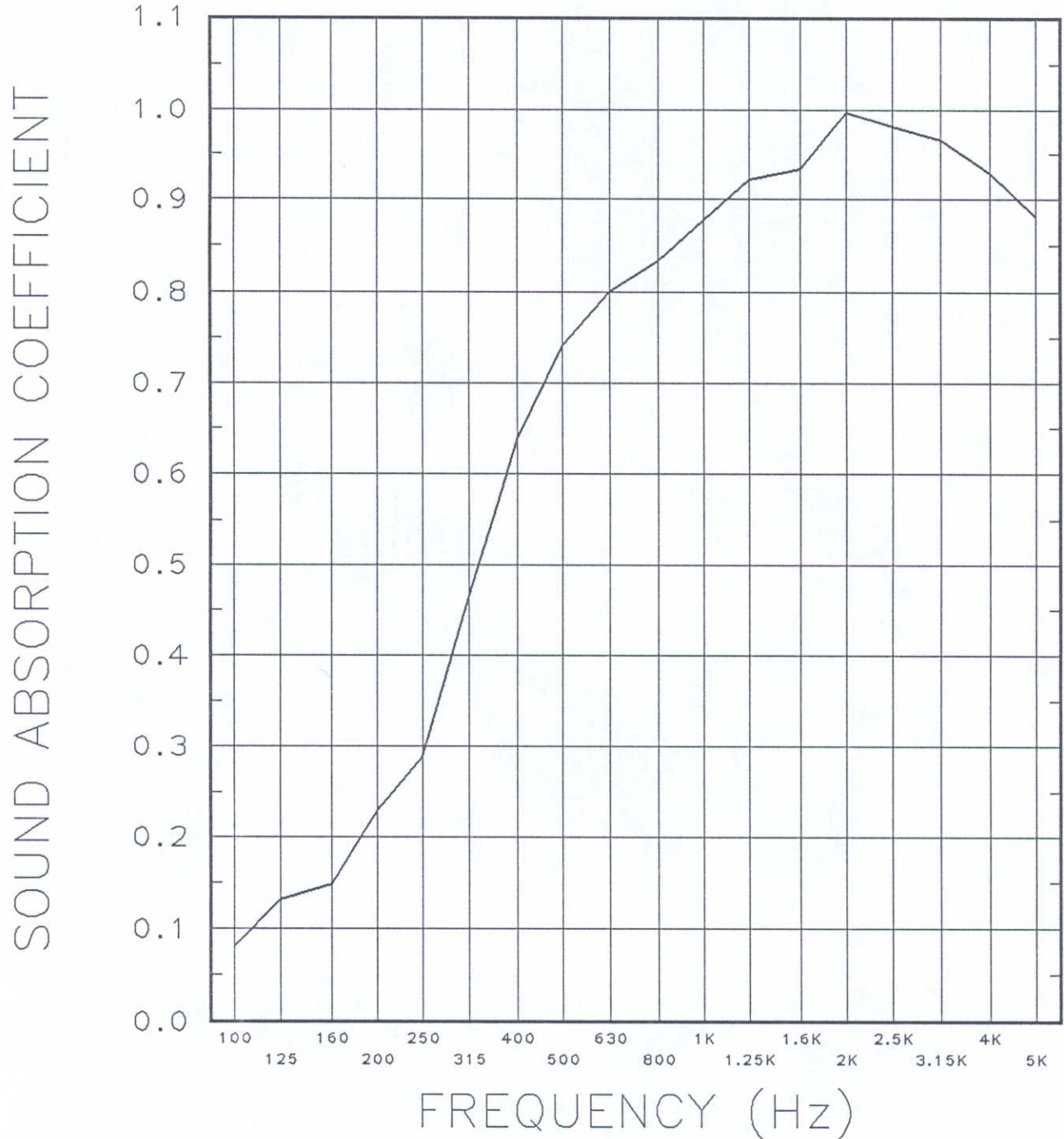
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NRC = 0.75

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### TEST RESULTS (con't)

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 C423-90a. 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 2000 Hz, expressed to the nearest integral multiple of 0.05.

Tested &  
Reviewed by   
Dean Victor  
Senior Experimentalist

Submitted by   
James E. Stangel  
Laboratory Manager

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### TEST RESULTS

1/3 Octave Center Frequency (Hz)	Absorption Coefficient	Total Absorption In Sabins	% Of Uncertainty With 95% Confidence Limit With Specimen
100	0.08	5.81	3.99
** 125	0.13	9.45	2.71
160	0.15	10.61	2.53
200	0.23	16.43	1.95
** 250	0.29	20.82	1.69
315	0.46	33.35	1.23
400	0.64	45.91	1.48
** 500	0.74	53.32	1.19
630	0.80	57.59	1.21
800	0.83	59.98	1.05
** 1000	0.88	63.18	0.91
1250	0.92	66.32	0.90
1600	0.93	67.15	0.89
** 2000	1.00	71.77	0.69
2500	0.98	70.56	0.65
3150	0.96	69.46	0.65
** 4000	0.93	66.78	0.71
5000	0.88	63.39	0.55

NRC = 0.75

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