



Acoustical Surfaces, Inc.

SOUNDPROOFING, ACOUSTICS, NOISE & VIBRATION CONTROL SPECIALISTS

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We Identify and **S.T.O.P.** Your Noise Problems



662 CROMWELL AVENUE
ST. PAUL, MN 55114
PHONE: 651/645-3601

NOISE REDUCTION COEFFICIENT TEST

PROJECT: 2" DW Pattern Foam Panels

TO: Rendered by Manufacturer and Released to:
Architectural Surfaces Inc./Acoustical Surfaces Inc.

DATE: January 4, 1991
PROJECT NO: 4143 91-0177 B

GENERAL:

Twin City Testing Corporation has accredited by the U.S. Department of Commerce, National Institute of Standards and Technology (NIST, formally NBS) under their National Voluntary Laboratory Accreditation Program (NVLAP) for conducting this test procedure.

TEST RESULTS SUMMARY:

the NRC of the sample described herein is 0.80 (see individual frequency values below under TEST RESULTS).

SPECIMEN IDENTIFICATION:

Manufacturer: Rendered by Manufacturer and Released to Architectural Surfaces Inc./Acoustical Surfaces Inc.
Type: Dual Wave Pattern 2" Polyurethane Foam
Size: Sample: 2" x 48" x 144", Specimen - 2" x 48" x 48"
Weight: 12 lbs. .25 per sq. ft.

TEST PROCEDURE:

The test was conducted in accordance with ASTM: C423(90a) "Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method." The Type A Mounting was used with the sample placed flat on the floor near, but not at the center of a 5300 cubic foot reverberation chamber. Reverberation times of the empty chamber are compared to the reverberation times of the chamber with the specimen inside, to obtain absorption coefficients at the six octave band test frequencies. Absorption coefficients are the fraction of diffuse incident sound absorbed by the specimen. The fraction of absorbed sound is measured in Sabins per square foot of Specimen.

The Noise Reduction Coefficient (NRC) is the average coefficients for 250, 500, 1000 and 2000 Hertz. The average is expressed to the nearest integral of 0.05.



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TEST PROCEDURE CONT'D

The sound absorption coefficient for each frequency was calculated by the following equation:

$$A = [(A2 - A1)/S]$$

Where

A= Absorption coefficient of test specimen, Sabins/ft²

A1=Absorption of empty room, Sabins

A2=Absorption of room with specimen, Sabins

S= Surface area, ft²

TEST EQUIPMENT:

<u>Manufacturer</u>	<u>Model</u>	<u>Description</u>	<u>S/N</u>
Norwegian Electronics	NE830	Real Time Spectrum Analyzer	11511
Bruel & Kjaer	3923	Rotating Microphone Boom	263439
Larson - Davis	2560	Pressure Condenser Microphone	1032

TEST RESULTS:

<u>FREQ</u> <u>Hz</u>	<u>COEFFICIENT</u> <u>SABINS/FT²</u>	<u>C.L.</u>	<u>FREQ</u> <u>Hz</u>	<u>COEFFICIENT</u> <u>SABINS/FT²</u>	<u>C.L.</u>
125	0.15	0.06	1000	1.04	0.01
250	0.31	0.03	2000	1.08	0.01
500	0.73	0.03	4000	1.12	0.01

Noise Reduction Coefficient (NRC) = 0.80

FREQ = Frequency - Octave Band (Hz)

COEFFICIENT = Sound Absorption Coefficient, Sabins / Ft²

C.L. = Uncertainty, Sabins / Ft² (95% Confidence Limit)

TWIN CITY TESTING CORPORATION

Reviewed by:

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