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HUNTINGDON ENGINEERING & ENVIRONMENTAL, INC.
662 Cromwell Avenue
St. Paul, Minnesota 55114

NOISE REDUCTION COEFFICIENT (NRC)
ASTM 423-90a

Composite Barrier Material

Rendered by Manufacturer and Released to:
Acoustical Surfaces, Inc.
123 Columbia Court North
Chaska, Minnesota 55318

Client Purchase Order Number: 60411
Huntingdon Project Number: 4140 94-1981.2
Date: June 29, 1994

Purchased By:

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The test results contained in this report pertain only to the samples submitted for testing and not necessarily to all similar products.

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NOISE REDUCTION COEFFICIENT TEST - ASTM C423-90a

INTRODUCTION:

This report presents the results of a Noise Reduction coefficient (NRC) test conducted on a Composite Barrier Material submitted by the Manufacturer. This test was requested by the Manufacturer on June 17, 1994 and was conducted on June 20, 1994.

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TEST RESULTS SUMMARY:

The NRC of the sample described below is 0.85 (See individual frequency values below under "TEST RESULTS").

SPECIMEN IDENTIFICATION:

Rendered by Manufacturer and Released to: Acoustical Surfaces Inc.

Sample: Composite Barrier Material

Dimensions (W x H x D): 4.5' x 4.7' x 1.25"

Weight: 25 lbs. per specimen

Surface Area: 21.3 ft² per specimen

Total Surface Area Tested: 1.3 ft² – consisting of specimen(s)

Mounting Type: Mounted vertically within a 60-STC filler wall with backside exposed to the reverberation chamber

Specimen Description: – 1" flat foam
– Rubber bonding material
– 1/4" Flat foam

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TEST METHOD:

ASTM: C423-90a, "Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method" was followed in every respect.

Absorption coefficients are the fraction of diffuse incident sound absorbed by the specimen and are expressed in sabins per square foot. The NRC is the average of the absorption coefficients for 250, 500, 1000, and 2000 Hertz and is reported to the nearest integral of 0.05.

The temperature and relative humidity of the chamber during the test was 70° F and 48%, respectively.

TEST EQUIPMENT:

<u>Manufacturer</u>	<u>Model</u>	<u>Description</u>	<u>S/N</u>
Northern Electronics	NE830	Real Time Analyzer	11511
Brüel & Kjær	3923	Rotating Microphone Boom	815424
Larson-Davis	2560	Pressure Condenser Microphone	1032

TEST RESULTS:

Freq. (Hz)	Abs. Coefficient	Uncertainty &
125	0.33	5.7
250	0.24	32.5
500	0.63	1.3
1000	1.23	1.1
2000	1.35	0.9
4000	1.14	0.8

Noise Reduction Coefficient (NRC) = 0.85

- Freq. = Octave band center frequency
- Abs. Coefficient = Sound absorption coefficient (extended plane applications)
- Sabins per Unit Tested = Reported for samples used as unit absorbers/diffusers
- Uncertainty = % uncertainty of the absorption coefficient for 95% confidence

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