



**Title: Sound Absorption Test Results**

**Product: Gel-coated, Fiberglass Barrel Diffuser**

Application: Wall & Ceiling

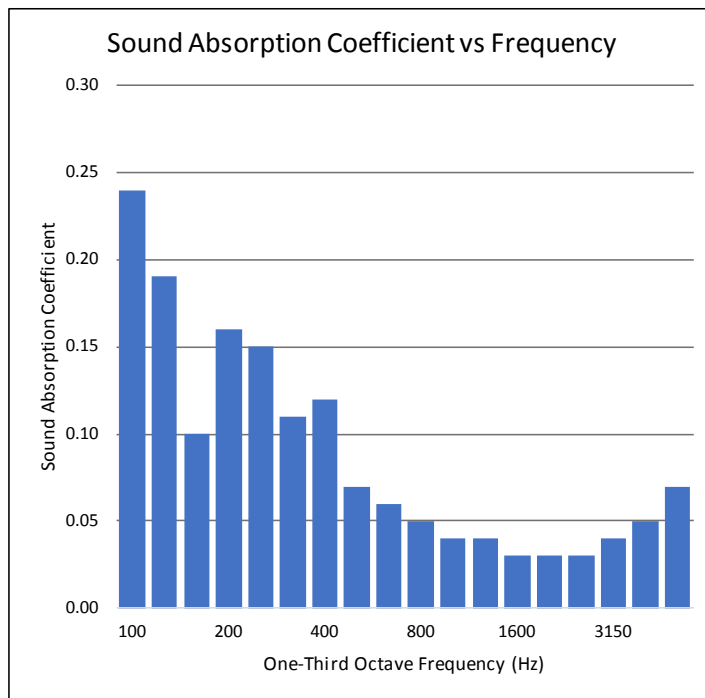
Testing Standard: ASTM C423 A-Mount

Test Date: 10/07/2002

*Why this test: This test evaluates a products efficiency of absorbing sound at multiple frequencies. The test simulates the product's acoustical performance with a direct installation on a wall or ceiling.*

Test Result Summary: NRC - 0.05; SAA - 0.07

NRC	SAA
0.05	0.07
Frequency (Hz)	Absorption Coefficient
100	0.24
125	0.19
160	0.10
200	0.16
250	0.15
315	0.11
400	0.12
500	0.07
630	0.06
800	0.05
1000	0.04
1250	0.04
1600	0.03
2000	0.03
2500	0.03
3150	0.04
4000	0.05
5000	0.07



Test ID: 3018 02 50173

**ASI TEST RESULT DISCLAIMER**

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**DATE:** October 7, 2002

## **SOUND ABSORPTION - ASTM C423-90a**

### **INTRODUCTION:**

This report presents the results of a Noise Reduction Coefficient (NRC) test conducted on a (4) Gel-coated Sound Diffusers. This test was requested on August 18, 2002 with the testing completed on October 7, 2002.

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**SUMMARY OF RESULTS:** See "TEST DATA" on page 4 for detailed data and graphs.)

When tested using the Type A mounting (flat on the reverberation chamber floor), the test sample obtained an NRC rating of 0.05.

### **SPECIMEN IDENTIFICATION:**

The four specimens tested were identified as Type BD44 molded fiberglass, Barrel Diffusers with a gelcoat finish, manufactured by Sound Seal. Each specimen had dimensions of 46 5/8" x 46 5/8" x 7" deep and weighed 22 lbs. or 1.46 PSF.

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**TEST METHOD:**

ASTM C 423-90a, "Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method" was followed in every respect. The four (4) test specimens has a total area of 60.4 ft<sup>2</sup>. and were positioned tightly together on the reverberation chamber floor in a square (Type A mounting).

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 tests were 72°F and 60%, respectively.

**TEST EQUIPMENT:**

<b><u>Manufacturer</u></b>	<b><u>Model</u></b>	<b><u>Serial #</u></b>	<b><u>Description</u></b>
Norwegian Electronics	NE830	11511	Real Time Spectrum Analyzer
Brüel & Kjær	3923	815424	Rotating Microphone Boom
Larson-Davis	2560	1032	Pressure Condenser Microphone
Compaq Computer	V20 CIO	A942CZGZE580	Custom Designed Software

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**1/3 Octave Band**

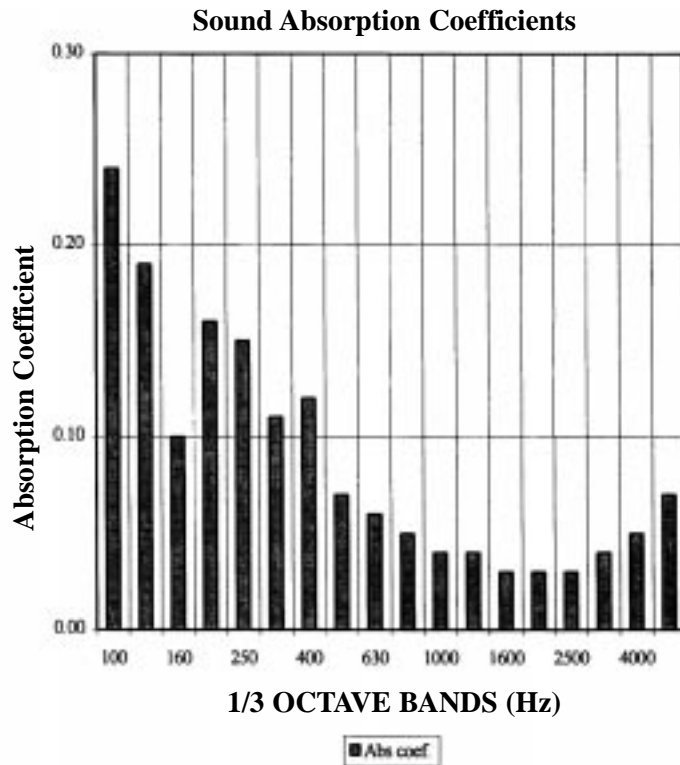
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**TEST RESULTS:**

Project No. 3018 02 50173

Tested by: Jason Burggraff

1/3 Oct. Band, Hz	Abs coef.	Abs Sabins*
100	0.24	3.56
125	0.19	2.92
160	0.10	1.49
200	0.16	2.45
250	0.15	2.27
315	0.11	1.63
400	0.12	1.78
500	0.07	1.13
630	0.06	0.83
800	0.05	0.68
1000	0.04	0.66
1250	0.04	0.56
1600	0.03	0.43
2000	0.03	0.52
2500	0.03	0.41
3150	0.04	0.58
4000	0.05	0.76
5000	0.07	0.99
NRC	0.05	
SAA	0.07	



Abs coef. = Absorption Coefficient  
 Abs Sabins = Absorption (Sabins)  
 \*=per sample (1 of 4 samples)

**SPECIMEN IDENTIFICATION:**

**Manufacturer:** Rendered by manufacturer for Acoustical Surfaces Inc.

Test Date: 7-Oct-02

**Model:** BD44 Barrel Diffuser

Temp: 23°C RH: 60%

**Specimen Description:**

Type Gel-coated, Fiberglass Barrel Diffuser

**Nominal Dimensions:**

Mounting type Type A - Flat on floor, 4 Diffusers arranged in a square pattern.

Width, in: 46.6  
 Height, in: 46.6  
 Depth in: 7.0  
 Weight, lb: 22.0