



**Title: Sound Absorption Test Results**

**Product: 9 baffles - 1" Echo Eliminator**

Application: Ceiling

Testing Standard: ASTM C423 with baffles suspended on two cables - 24" spacing between baffles - 45" between cables

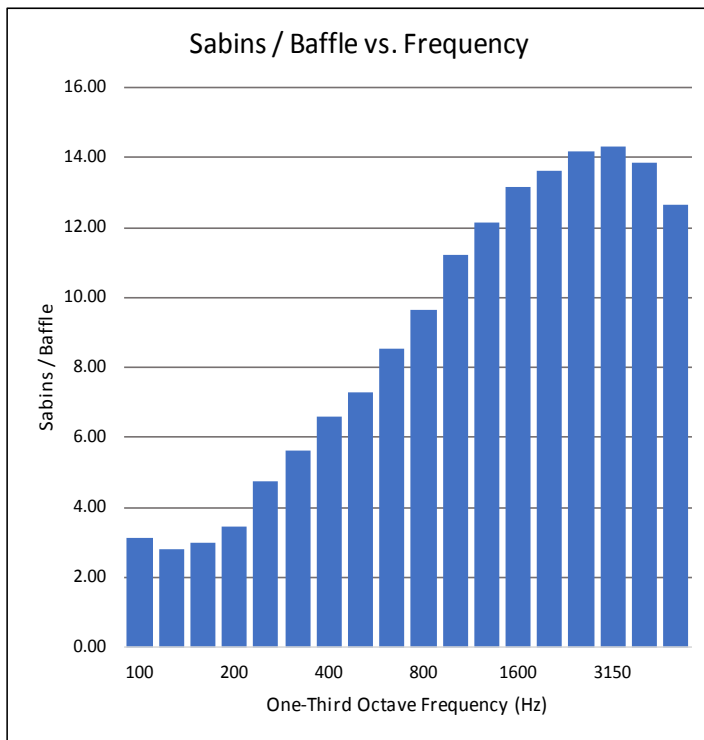
Test Date: 09/26/2000

*Why this test: This test evaluates a products efficiency of absorbing sound at multiple frequencies. The test simulates the product's acoustical performance installed as hanging baffles.*

Test Result Summary: Sabins / Baffle average at NRC frequencies - 9.25

|   |  |
|---|--|
| <b>Sabins / Baffle average at NRC frequencies</b> |  |
| <b>9.25</b>                                       |  |

| Frequency (Hz) | Absorption (Sabins/Baffle) |
|----------------|----------------------------|
| 100            | 3.11                       |
| 125            | 2.81                       |
| 160            | 3.00                       |
| 200            | 3.46                       |
| 250            | 4.76                       |
| 315            | 5.61                       |
| 400            | 6.59                       |
| 500            | 7.31                       |
| 630            | 8.53                       |
| 800            | 9.63                       |
| 1000           | 11.20                      |
| 1250           | 12.14                      |
| 1600           | 13.14                      |
| 2000           | 13.63                      |
| 2500           | 14.18                      |
| 3150           | 14.31                      |
| 4000           | 13.84                      |
| 5000           | 12.64                      |



Test ID: 18 0-0730.11

**ASI TEST RESULT DISCLAIMER**

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DATE: September 26, 2000

STOCK / TWIN CITY TESTING CORPORATION  
662 Cromwell Avenue  
St. Paul, Minnesota 55114

SOUND ABSORPTION TESTING CONDUCTED  
ON NINE BAFFLES CONSISTING OF  
1" THICK BAFF INSULATION

Prepared for:  
ACOUSTICAL SURFACES – DIVISION OF  
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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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**DATE:** September 26, 2000

### **SOUND ABSORPTION - ASTM C423-99a**

#### **INTRODUCTION:**

This report presents the results of Sound Absorption testing conducted on three baffles consisting of 1" thick BAFP insulation submitted by Acoustical Surfaces. This work was requested by Mr. Mike Nixon on September 6, 2000 with the testing conducted on September 13, 2000.

This report must not be reproduced except in its entirety with the approval of Stork / Twin City Testing Corporation. The data in this report relates only to the item tested.

Stork / Twin City Testing Corporation has been accredited by the U.S. Department of Commerce and the National Institute of Standards and Technology (NIST, formerly NBS) under their National Voluntary Laboratory Accreditation Program (NVLAP) for conducting this test procedure. This report may not be used to claim product endorsement by NVLAP or any agency of the U.S. Government.

#### **TEST RESULTS SUMMARY:**

The Sabins / Baffle average of the tested specimens was **9.25** at the NRC frequencies of 250, 500, 1000 and 2000 Hertz. A detailed data sheet is provided below under "TEST RESULTS".

#### **TEST PROCEDURE:**

ASTM: C423-99a, "Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method" was followed in every respect. The baffles were suspended above the floor of the reverberation chamber on cables. The full mounting and and configuration details are provided under "TEST RESULTS" below.

#### **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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**TEST RESULTS:**

**DATE:** September 26, 2000

Manufacturer : Acoustical Surfaces  
Type : Baffles – 1" layer BAFP.  
Dimensions (W x H x D) : 2' x 4' x 1"  
Weight : 21 lbs. (0.29 psf)  
Surface Area : 8.0 ft<sup>2</sup>  
Total Surface Area : 144 ft<sup>2</sup> – consisting of 9 baffles-(2 sides) –  
Mounting Type : 3 specimens each suspended on 2 cables 24" apart and 3 specimens perpendicular across the two cables inbetween the longitudinal baffles–

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| <b>Frequency<br/>Hz</b> | <b>Absorption<br/>Coefficients)</b> |
|-------------------------|-------------------------------------|
| <b>100</b>              | 3.11                                |
| <b>125</b>              | 2.81                                |
| <b>160</b>              | 3.00                                |
| <b>200</b>              | 3.46                                |
| <b>250</b>              | 4.76                                |
| <b>315</b>              | 5.61                                |
| <b>400</b>              | 6.59                                |
| <b>500</b>              | 7.31                                |
| <b>630</b>              | 8.53                                |
| <b>800</b>              | 9.63                                |
| <b>1000</b>             | 11.20                               |
| <b>1250</b>             | 12.14                               |
| <b>1600</b>             | 13.14                               |
| <b>2000</b>             | 13.63                               |
| <b>2500</b>             | 14.18                               |
| <b>3150</b>             | 14.31                               |
| <b>4000</b>             | 13.84                               |
| <b>5000</b>             | 12.64                               |

**Sabins / Baffle Average (NRC Frequencies) = 9.25**

The NRC frequencies are at 250, 500, 1000, and 2000 Hz