



SINCE 1896

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REPORT



Accredited by the National Voluntary Laboratory Accreditation Program for the Specific Accreditation under Lab Code 100402-0.

Order No. 3112948

Date: January 8, 2007

REPORT NO. 3112948CRT-001

SOUND ABSORPTION TEST ON A FIBERGRATE PERFORATED SOUNDSCAPE SOUND BARRIER SYSTEM

RENDERED TO

**FIBERGRATE CORPORATION
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STEPHENVILLE, TX 76401**

INTRODUCTION

This report gives the results of a Sound Absorption test and the determination of the Noise Reduction Coefficient on a Fibergrate Perforated Soundscape barrier system. The test specimen was selected and supplied by the client and received at the laboratories on December 27, 2006. The test barrier appeared to be in a new, unused condition upon arrival.

AUTHORIZATION

Purchase Order No. 80 20 88 and signed Intertek quote number 500015135.

TEST METHOD

The specimen was tested in accordance with the American Society for Testing and Materials designation ASTM C423-02, "Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method".

GENERAL

This test method describes the measurement of sound absorption by analyzing the decay rate of sound in a reverberation room. The difference of the decay with and without the specimen in the room is utilized to determine the sound absorption of the specimen under test. Intertek Testing Services Acoustical Facilities utilizes a 16,640 cu. ft. (470 cubic meter) reverberation room.

An independent organization testing for safety, performance, and certification.

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GENERAL cont'd

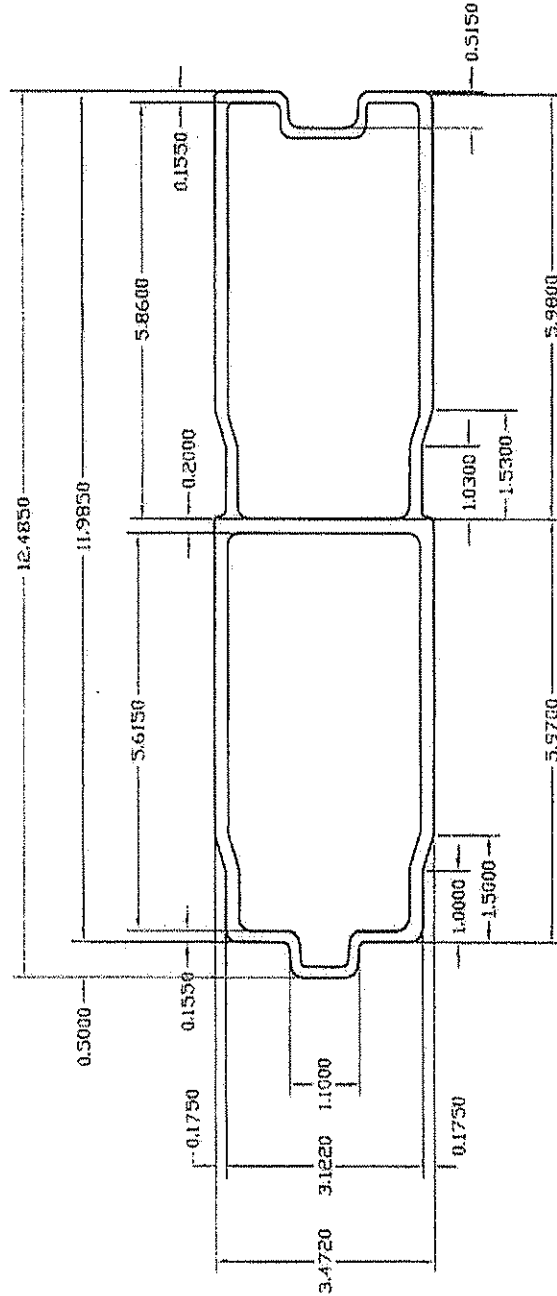
The sound absorption coefficient is ideally defined as the fraction of the randomly incident sound power absorbed by the material. The greater the coefficient, the greater the sound absorption.

The Noise Reduction Coefficient (NRC) is a single number rating obtained by taking the arithmetic average of the absorption coefficients at 250, 500, 1000, and 2000 Hz rounded to the nearest multiple of 0.05.

The Sound Absorption Average (SAA) is a single number rating obtained by taking the arithmetic average of the one-third octave bands from 200 through 2500 Hz rounded to the nearest 0.01.

DESCRIPTION OF TEST SPECIMENS

The perforated Fibergrate Soundscape Sound Barrier exposed panel section measured 88½ inches wide by 96 inches long by 3½ inches thick. The panel was constructed of a combination of sections as shown in the attached drawing (supplied by the client). The surface exposed to the sound field had ¾ inch diameter openings spaced on 1½ inch centers covering a mineral fiber material. The section ends were held together and covered with an eight inch wide by high "H" member, eight foot in length.



ETL SEMKO



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RESULTS OF MEASUREMENTS**Perforated Panel**

| <u>1/3 Octave Band Center Frequency, Hz</u> | <u>Absorption Coefficients Sabins/ft²</u> | <u>Percent Uncertainty</u> |
|---|--|--------------------------------|
| 80 | 0.27 | 2.56 |
| 100 | 0.27 | 3.73 |
| 125 | 0.38 | 4.03 |
| 160 | 0.88 | 2.60 |
| 200 | 1.09 | 2.87 |
| 250 | 1.21 | 2.50 |
| 315 | 1.24 | 1.54 |
| 400 | 1.24 | 1.43 |
| 500 | 1.18 | 2.16 |
| 630 | 1.09 | 2.02 |
| 800 | 0.98 | 1.66 |
| 1000 | 0.96 | 1.02 |
| 1250 | 0.93 | 1.03 |
| 1600 | 0.89 | 1.03 |
| 2000 | 0.76 | 0.52 |
| 2500 | 0.59 | 0.64 |
| 3150 | 0.40 | 0.62 |
| 4000 | 0.34 | 1.29 |
| 5000 | 0.22 | 0.52 |

Sound Absorption
Average (SAA) 1.01

| <u>Identification</u> | <u>Absorption Coefficients – Sabins/ft²</u> | | | | | | <u>NRC</u> |
|-----------------------|--|------------|------------|-------------|-------------|-------------|------------|
| | <u>1/3 Octave Band Center Frequency, Hz</u> | | | | | | |
| | <u>125</u> | <u>250</u> | <u>500</u> | <u>1000</u> | <u>2000</u> | <u>4000</u> | |
| Perforated Panel | 0.38 | 1.21 | 1.18 | 0.96 | 0.76 | 0.34 | 1.05 |
| Precision ± | 0.05 | 0.02 | 0.02 | 0.01 | 0.01 | 0.02 | |

MOUNTING: Type "A" per ASTM Designation E795-00, "Standard Practices for Mounting Test Specimens During Sound Absorption Tests". Specimen laid directly on the concrete floor.

REMARKS

1. Aging Period: None
2. Ambient Temperature: 68°F
3. Relative Humidity: 45%

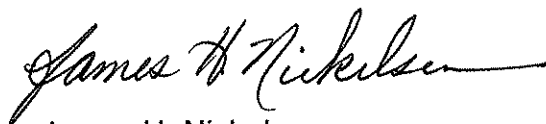
CONCLUSION

The test method employed for these tests has no pass-fail criteria; therefore, the evaluation of the test results is left to the discretion of the client.

This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government

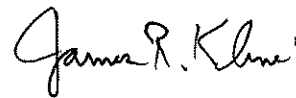
Date of Test: January 2, 2007

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