



Title: Sound Absorption Test Results

Product: 1-3/8" Envirocoustic Wood Wool with 2" CFAB Backer

Application: Ceiling with open plenum

Testing Standard: ASTM C423-E400

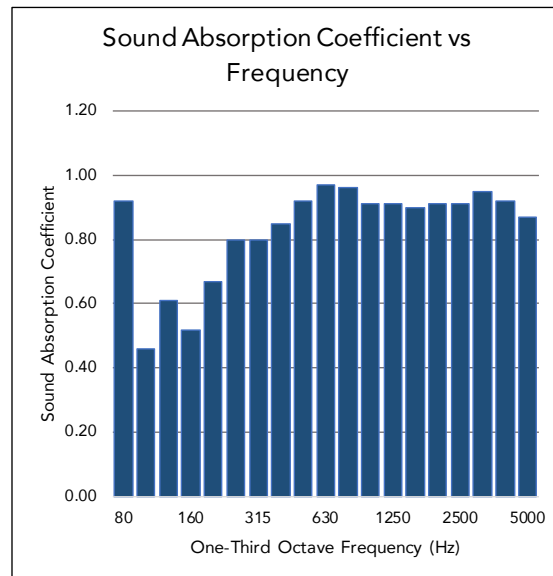
Test Date: 4/2/2018

Why this test: This test evaluates a products efficiency of absorbing sound at multiple frequencies. The test simulates the product installation in a ceiling with a plenum above, i.e. ceiling tile installed into ceiling grid.

Test Result Summary: NRC - 0.90; SAA - 0.88

| | |
|-------------|-------------|
| NRC | SAA |
| 0.90 | 0.88 |

| Frequency (Hz) | Absorption Energy (m ²) | Absorption Samples (m ²) | Absorption Coefficient |
|----------------|-------------------------------------|--------------------------------------|------------------------|
| 80 | 4.35 | 6.12 | 0.92 |
| 100 | 5.36 | 3.05 | 0.46 |
| 125 | 3.99 | 4.09 | 0.61 |
| 160 | 3.69 | 3.47 | 0.52 |
| 200 | 3.93 | 4.50 | 0.67 |
| 250 | 3.95 | 5.38 | 0.80 |
| 315 | 3.83 | 5.37 | 0.80 |
| 400 | 3.95 | 5.65 | 0.85 |
| 500 | 4.45 | 6.14 | 0.92 |
| 630 | 4.68 | 6.49 | 0.97 |
| 900 | 5.02 | 6.39 | 0.96 |
| 1000 | 5.34 | 6.08 | 0.91 |
| 1250 | 5.82 | 6.11 | 0.91 |
| 1600 | 6.49 | 6.00 | 0.90 |
| 2000 | 7.27 | 6.10 | 0.91 |
| 2500 | 8.15 | 6.09 | 0.91 |
| 3150 | 9.42 | 6.34 | 0.95 |
| 4000 | 11.87 | 6.14 | 0.92 |
| 5000 | 14.24 | 5.82 | 0.87 |



Test ID: ESP027746P-5

ASI TEST RESULT DISCLAIMER

ASI makes every effort to ensure the accuracy and reliability of the information provided. Laboratory testing is conducted by independent testing organizations. ASI does not guarantee that field tests or independent tests will not vary.



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**SOUND ABSORPTION TESTING CONDUCTED ON a
1-3/8" Cementitious Wood Fiber Acoustic Board with 2", 3# CFAB Backer**

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Date: April 2, 2018
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Report Number: ESP027746P-5



TESTING CERT #1479.01

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Noise Reduction Coefficient (ASTM C423)

INTRODUCTION:

This report presents the results of acoustical testing of a 1-3/8" Cementitious Wood Fiber Acoustic Board with a 2", 3# Density CFAB Backer. This testing was requested by Mr. Conor Cook of ASI and was conducted on March 6th, 2018.

This report must not be reproduced except in full without the approval of Element Materials Technology. The test results contained in this report pertain only to the specific assemblies tested and not necessarily to all similar constructions.

The results stated in this report represent only the specific construction and acoustical conditions present at the time of the test. Measurements performed in accordance with this standard on nominally identical constructions and acoustical conditions may produce different results.

TEST RESULTS SUMMARY:

| <i>Noise Reduction Coefficient (NRC) Test Type E400 Mount</i> | | | | Test Results | | |
|---|--|--------------------|--------------|--------------|-------------|----|
| Test # | Sample Identification | Total Weight (lbs) | Weight (psf) | NRC | SAA | -- |
| 5 | 1-3/8" Cementitious Wood Fiber Board with 2", 3# Density CFAB Backer | 233.5 | 3.25 | 0.90 | 0.88 | -- |

Tabular and graphical presentations of the data are presented under "TEST RESULTS" below.

SPECIMEN DESCRIPTION: (Also see "Test Results")

The Specimen was described as a 1-3/8" Cementitious Wood Fiber Acoustic Board. A 2", 3lb Density CFAB Backer material was placed under the specimen. The overall sample size was 108.75" x 95.25" or 71.9 ft². Four wood fiber panels measured 23.75" x 95.25" and one panel measured 13.75" x 95.25". The CFAB Backer was supported from the bottom using a wire frame. The backing material weighed 28 lbs.

TEST PROCEDURE AND EQUIPMENT:

Sound Absorption Test

ASTM C 423-17, "Sound Absorption and Sound Absorption Coefficient by the Reverberation Room Method", was followed in every respect. The samples were placed in a Type E-400 mounting method in accordance with ASTM E795-16.

NRC was calculated by rounding the sound absorption coefficients for 250, 500, 1000 and 2000 Hz to the nearest 0.05. SAA was calculated by rounding the sound absorption coefficients for the twelve frequencies from 200 Hz to 2500 Hz to the nearest 0.01.

TEST EQUIPMENT:

| Item Description | ID # | Manufacturer/Model | Serial # | Calibration Due |
|------------------------------------|------------|-----------------------------|-----------------|-----------------|
| 1/2" Pressure Condenser Microphone | PT-162-216 | BSWA/MP253 | 450005 | 11/2/18 |
| Microphone Calibrator | PT-162-076 | Norsonic/1251 | 29144 | 6/30/18 |
| Data Acquisition Module | PT-162-107 | National Instruments/NI9234 | 1735986-1893EB3 | 6/1/18 |
| Temp and Humidity Transmitter | PT-162-077 | Dwyer Instruments/Series RH | M90714-E4SV-Y | 6/1/18 |

Test Result:

SOUND ABSORPTION
ASTM C423

General Information

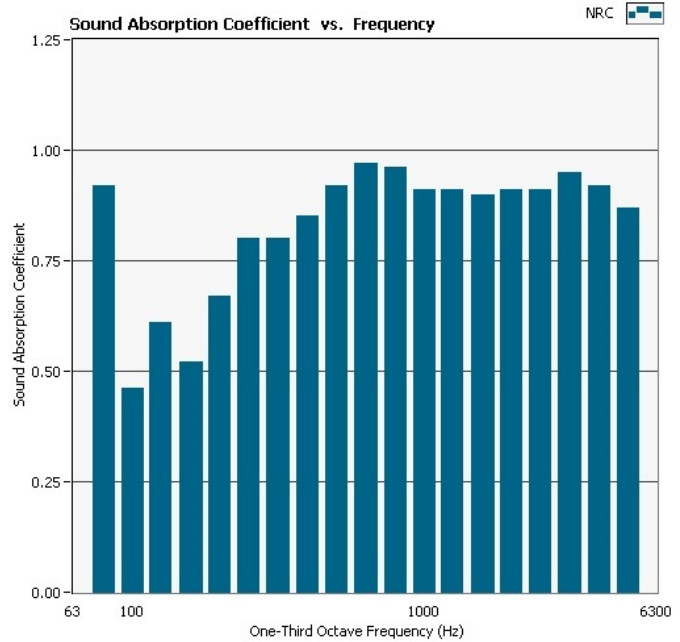
| | |
|-----------------------------|---|
| Project No: | ESP027746P-5 |
| Customer: | ASI |
| Test Date: | 03-06-2018 |
| Specimen ID: | 1-3/8" Cementitious Wood Fiber Acoustic Board |
| Specimen Description: | 2 Inch CFAB E400 |
| Specimen Dimensions - Area: | 108.75" W x 95.25" H - 71.93 ft ² |
| Operator: | MJC |

Data Table

| | absorption empty (m ²) | absorption * sample (m ²) | Absorption Coefficient |
|------|------------------------------------|---------------------------------------|------------------------|
| 80 | 4.35 | 6.12 | 0.92 |
| 100 | 5.36 | 3.05 | 0.46 |
| 125 | 3.99 | 4.09 | 0.61 |
| 160 | 3.69 | 3.47 | 0.52 |
| 200 | 3.93 | 4.50 | 0.67 |
| 250 | 3.95 | 5.38 | 0.80 |
| 315 | 3.83 | 5.37 | 0.80 |
| 400 | 3.95 | 5.65 | 0.85 |
| 500 | 4.45 | 6.14 | 0.92 |
| 630 | 4.68 | 6.49 | 0.97 |
| 800 | 5.02 | 6.39 | 0.96 |
| 1000 | 5.34 | 6.08 | 0.91 |
| 1250 | 5.82 | 6.11 | 0.91 |
| 1600 | 6.49 | 6.00 | 0.90 |
| 2000 | 7.27 | 6.10 | 0.91 |
| 2500 | 8.15 | 6.09 | 0.91 |
| 3150 | 9.42 | 6.34 | 0.95 |
| 4000 | 11.87 | 6.14 | 0.92 |
| 5000 | 14.24 | 5.82 | 0.87 |

Room Conditions

| | |
|-------------|---------|
| Temperature | 21.2 °C |
| R.H. | 48 % |
| ATM | 976 hPa |



NRC
0.90

SAA
0.88

* based on an extended plane area of 71.93 ft²



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