



**Title: Sound Absorption Test Results**

**Product: 1" Envirocoustic Wood Wool with 2" CFAB Backer**

Application: Ceiling with open plenum

Testing Standard: ASTM C423-E400

Test Date: 10/11/2017

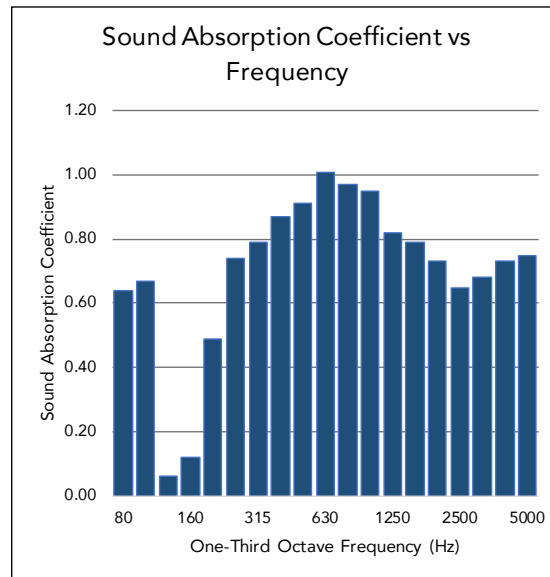
*Why this test:* This test evaluates a products efficiency of absorbing sound at multiple frequencies. The test simulates the product installation in a ceiling with a plenum above, i.e. ceiling tile installed into ceiling grid.

Test Result Summary: NRC - 0.85; SAA - 0.81

<b>NRC</b>
<b>0.85</b>

<b>SAA</b>
<b>0.81</b>

Frequency (Hz)	Absorption Energy (m <sup>2</sup> )	Absorption Samples (m <sup>2</sup> )	Absorption Coefficient
80	5.14	4.17	<b>0.64</b>
100	5.84	4.41	<b>0.67</b>
125	4.67	0.42	<b>0.06</b>
160	4.31	0.76	<b>0.12</b>
200	5.37	3.24	<b>0.49</b>
250	5.06	4.84	<b>0.74</b>
315	4.72	5.14	<b>0.79</b>
400	4.43	5.70	<b>0.87</b>
500	4.76	5.94	<b>0.91</b>
630	5.05	6.64	<b>1.01</b>
900	5.58	6.38	<b>0.97</b>
1000	5.90	6.23	<b>0.95</b>
1250	6.97	5.38	<b>0.82</b>
1600	7.57	5.20	<b>0.79</b>
2000	8.64	4.78	<b>0.73</b>
2500	9.58	4.26	<b>0.65</b>
3150	10.66	4.45	<b>0.68</b>
4000	12.58	4.80	<b>0.73</b>
5000	14.68	4.90	<b>0.75</b>



Test ID: ESP026258P-3

**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.

© 2018 ASI



Element Materials Technology  
662 Cromwell Avenue  
St Paul, MN  
55114-1720 USA

P 651 645 3601  
F 651 659 7348  
T 888 786 7555  
info.stpaul@element.com  
element.com

---

## SOUND ABSORPTION TESTING CONDUCTED ON a 1" Cementitious Wood Fiber Acoustic Board with 2" 3# CFAB Backer

Acoustical Surfaces  
123 Columbus Court North  
Chaska, MN 55318

Date: October 11, 2017  
Author: John Wegscheider  
Report Number: ESP026258P-3



TESTING CERT #1479.01

EAR Controlled Data: This document contains technical data whose export and re-export/retransfer is subject to control by the U.S. Department of Commerce under the Export Administration Act and the Export Administration Regulations. The Department of Commerce's prior written approval is required for the export or re-export/retransfer of such technical data to any foreign person, foreign entity or foreign organization whether in the United States or abroad.

These commodities, Technology, or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to U.S. law is prohibited.

This project shall be governed exclusively by the General Terms and Conditions of Sale and Performance of Testing Services by Element Materials Technology. In no event shall Element Materials Technology be liable for any consequential, special or indirect loss or any damages above the cost of the work.

---

Ear Controlled Data
---------------------

This Page Alone is not a complete report

---

## Noise Reduction Coefficient (ASTM C423-09a)

### INTRODUCTION:

This report presents the results of acoustical testing of a 1" Cementitious Wood Fiber Acoustic Board with a 2", 3# CFAB Backer. This testing was requested by Mr. Conor Cook of Acoustical Surfaces and was conducted on September 18, 2017.

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>				<b>Test Results</b>		
<b>Test #</b>	<b>Sample Identification</b>	<b>Total Weight (lbs)</b>	<b>Weight (psf)</b>	<b>NRC</b>	<b>SAA</b>	<b>--</b>
3	1" Cementitious Wood Fiber Acoustic Board w/2", 3# CFAB Backer	189.0	2.68	<b>0.85</b>	<b>0.81</b>	--

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

**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 E400 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-162-108	Gras/46AD	167994	1/3/18
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

**SPECIMEN DESCRIPTION:** (Also see "Test Results")

The Specimen was described as a 1" Cementitious Wood Fiber Acoustic Board. 2", 3# density CFAB backer was placed behind the Wood Wool. The overall sample size was 94.75" x 107.125" or 70.49 ft<sup>2</sup>.

**Test Result:**

**SOUND ABSORPTION**  
ASTM C423

**General Information**

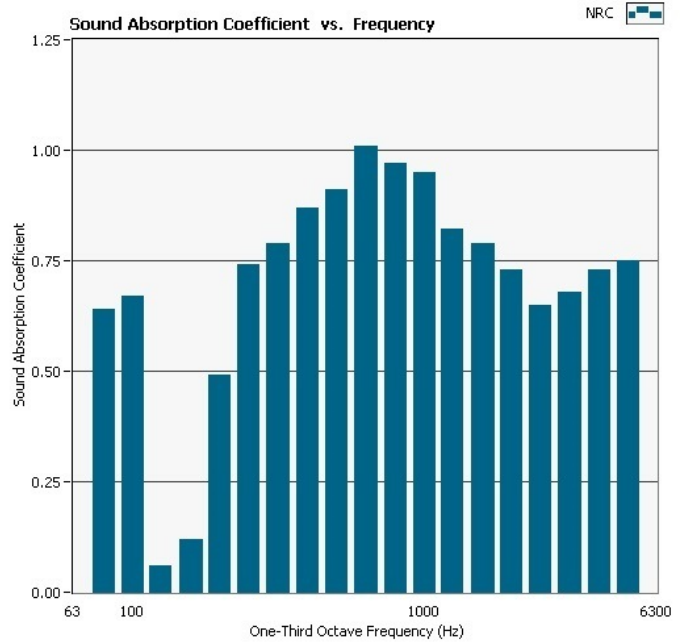
Project No:	ESP026258P-3
Customer:	Acoustical Surfaces
Test Date:	09-18-2017
Specimen ID:	1" Cementitious Wood Fiber Acoustic Board
Specimen Description:	Acoustic Panel added CFAB 2 inch
Specimen Dimensions - Area:	94.75" W x 107.12" H - 70.49 ft <sup>2</sup>
Operator:	AMW

**Data Table**

	absorption empty (m <sup>2</sup> )	absorption * sample (m <sup>2</sup> )	Absorption Coefficient
80	5.14	4.17	0.64
100	5.84	4.41	0.67
125	4.67	0.42	0.06
160	4.31	0.76	0.12
200	5.37	3.24	0.49
250	5.06	4.84	0.74
315	4.72	5.14	0.79
400	4.43	5.70	0.87
500	4.76	5.94	0.91
630	5.05	6.64	1.01
800	5.58	6.38	0.97
1000	5.90	6.23	0.95
1250	6.97	5.38	0.82
1600	7.57	5.20	0.79
2000	8.64	4.78	0.73
2500	9.58	4.26	0.65
3150	10.66	4.45	0.68
4000	12.59	4.80	0.73
5000	14.69	4.90	0.75

**Room Conditions**

Temperature	21.6 °C
R.H.	48 %
ATM	983 hPa



**NRC**  
**0.85**

**SAA**  
**0.81**

\* based on an extended plane area of 70.49 ft<sup>2</sup>



**John Wegscheider**  
Manager, Product Validation  
651-659-7353