



Title: Sound Absorption Test Results

Product: 1" StrandTec

Application: Ceiling with open plenum

Testing Standard: ASTM C423-E400

Test Date: 10/11/2017

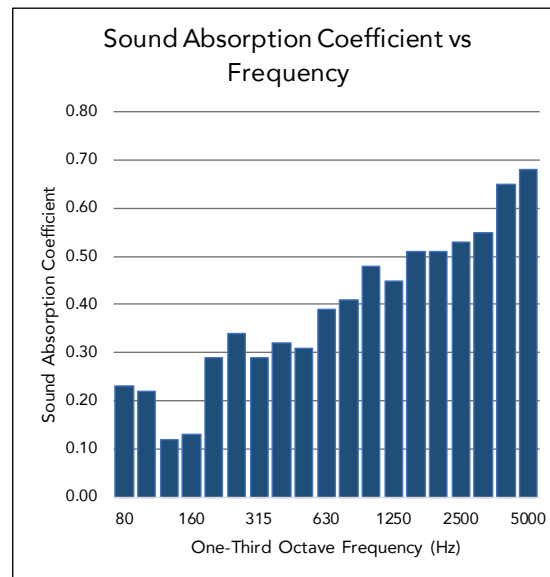
Why this test: This test evaluates a products efficiency of absorbing sound at multiple frequencies. The test simulates the product installation in a ceiling with a plenum above, i.e. ceiling tile installed into ceiling grid.

Test Result Summary: NRC - 0.40; SAA - 0.40

NRC
0.40

SAA
0.40

Frequency (Hz)	Absorption Energy (m ²)	Absorption Samples (m ²)	Absorption Coefficient
80	5.14	1.48	0.23
100	5.84	1.47	0.22
125	4.67	0.77	0.12
160	4.31	0.86	0.13
200	5.37	1.93	0.29
250	5.06	2.24	0.34
315	4.72	1.92	0.29
400	4.43	2.08	0.32
500	4.76	2.03	0.31
630	5.06	2.56	0.39
900	5.58	2.68	0.41
1000	5.90	3.12	0.48
1250	6.98	2.96	0.45
1600	7.58	3.35	0.51
2000	8.64	3.32	0.51
2500	9.58	3.44	0.53
3150	10.66	3.63	0.55
4000	12.59	4.25	0.65
5000	14.69	4.47	0.68



Test ID: ESP026258P-1

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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

ASI
123 Columbus Court North
Chaska, MN 55318

Date: October 11, 2017
Author: John Wegscheider
Report Number: ESP026258P-1



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" Cementitious Wood Fiber Acoustic Board. This testing was requested by Mr. Conor Cook of ASI 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>				Test Results		
Test #	Sample Identification	Weight (lbs)	Weight (psf)	NRC	SAA	--
1	1" Cementitious Wood Fiber Acoustic Board	162.0	2.30	0.40	0.40	--

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. The overall sample size was 94.75" x 107.125" or 70.49 ft².

Test Result:

SOUND ABSORPTION ASTM C423

General Information

Project No:	ESP026258P-1
Customer:	ASI
Test Date:	09-18-2017
Specimen ID:	1" Cementitious Wood Fiber Acoustic Board
Specimen Description:	Acoustic Panel
Specimen Dimensions - Area:	94.75" W x 107.12" H - 70.49 ft²
Operator:	AMW

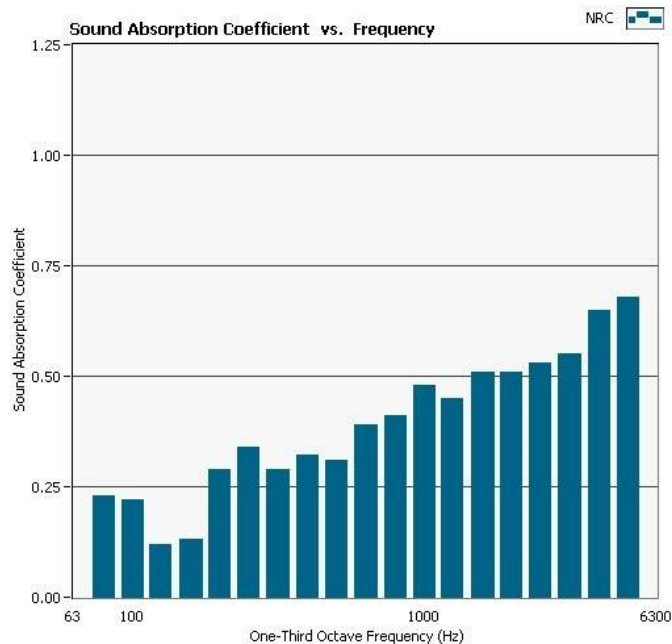
Data Table

	absorption empty (m²)	absorption * sample (m²)	Absorption Coefficient
80	5.14	1.48	0.23
100	5.84	1.47	0.22
125	4.67	0.77	0.12
160	4.31	0.86	0.13
200	5.37	1.93	0.29
250	5.06	2.24	0.34
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400	4.43	2.08	0.32
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630	5.06	2.56	0.39
800	5.58	2.68	0.41
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1600	7.58	3.35	0.51
2000	8.64	3.32	0.51
2500	9.58	3.44	0.53
3150	10.66	3.63	0.55
4000	12.59	4.25	0.65
5000	14.69	4.47	0.68

* based on an extended plane area of 70.49 ft²

Room Conditions

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



NRC

0.40

SAA

0.40



John Wegscheider
Manager, Product Validation
651-659-7353

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