

# SOUND SEAL ACOUSTICAL PERFORMANCE TEST REPORT

## SCOPE OF WORK

ASTM C423 SOUND ABSORPTION TESTING ON BIOCORE ACOUSTICAL WALL PANEL – 1"

## REPORT NUMBER

M0241.05-113-11-R0

## TEST DATE

03/30/21

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04/15/21

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10

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RT-R-AMER-Test-2755 (01/04/21)

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## TEST REPORT FOR SOUND SEAL

Report No.: M0241.05-113-11-R0

Date: 04/15/21

### REPORT ISSUED TO

#### SOUND SEAL

50 Herbert P. Almgren Drive  
Agawam, Massachusetts 01001

### SECTION 1

#### SCOPE

Architectural Testing, Inc. (an Intertek company) dba Intertek Building & Construction (B&C) was contracted to perform a sound absorption test. This report is a reissue of the original Report No. M0241.01-113-11. This report is reissued in the name of Sound Seal through written authorization from the original report holder. Results obtained are tested values and were secured by using the designated test methods. The complete test data is included herein. The original client provided the test specimen. All measurements were conducted in the HT test chambers at Intertek B&C located in York, Pennsylvania.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. Intertek B&C will service this report for the entire test record retention period. The test record retention period ends four years after the test date. Test records, such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation, will be retained for the entire test record retention period.

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For INTERTEK B&C:

<b>COMPLETED BY:</b>	Andrew M. Johnston	<b>REVIEWED BY:</b>	Kurt A. Golden
<b>TITLE:</b>	Technician Acoustical Testing	<b>TITLE:</b>	Project Lead Acoustical Testing
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<b>DATE:</b>	04/15/21	<b>DATE:</b>	04/15/21

AMJ:jmcs

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**SECTION 2**

**SUMMARY OF TEST RESULTS**

<b>SERIES/MODEL</b>	BioCore							
<b>SAMPLE TYPE</b>	Acoustical Wall Panel – 1"							
<b>MOUNTING TYPE</b>	F6							
<b>DATA FILE NO.</b>	<b>1/3 OCTAVE SOUND ABSORPTION COEFFICIENTS AT THE OCTAVE BAND FREQUENCIES</b>						<b>NRC</b>	<b>SAA</b>
	<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>		
M0241.01A	0.07	0.23	0.65	0.99	1.06	1.04	0.75	0.75

**SECTION 3**

**TEST METHODS**

The specimens were evaluated in accordance with the following:

**ASTM C423-17**, *Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method*

**ASTM E795-16**, *Standard Practices for Mounting Test Specimens During Sound Absorption Tests*

**SECTION 4**

**SPECIMEN MOUNTING**

For the Type F6 mounting, the test specimen utilized 6 mm thick Z-clip spacers that were fastened to the unfinished side of each panel, which elevated the test specimen 6 mm off the test surface. The panels were placed directly on the floor of the reverberation room with the absorptive side facing the sound field. The perimeter of the specimen was not sealed to the floor.

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### SECTION 5 EQUIPMENT

The equipment listed below meets the requirements of the test methods stated in Section 3 of this report.

INSTRUMENT	MANUFACTURER	MODEL	DESCRIPTION	ASSET #	CAL DATE
Data Acquisition Card	National Instruments	PXI-4462	Data Acquisition Card	63763-3*	04/20
Data Acquisition Card	National Instruments	PXI-4462	Data Acquisition Card	65125*	05/20
Data Acquisition Card	National Instruments	PXI-4462	Data Acquisition Card	65126*	05/20
Receive Room Microphone	PBC Piezotronics	378B20	Microphone and Preamplifier	64907	01/21
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64908	01/21
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64909	01/21
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64910	01/21
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64911	11/20
Receive Room Environmental Indicator	Comet	T7510	Receive Room	64915	01/21
Microphone Calibrator	Norsonic	1251	Acoustical Calibrator	Y002919	04/20

\*- Note: The calibration frequency for this equipment is every two years per the manufacturer's recommendation.

### TEST CHAMBER

	VOLUME	DESCRIPTION
RECEIVE ROOM	234 m <sup>3</sup>	Rotating vane and stationary diffusers Temperature and humidity controlled Isolation pads under the floor

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### SECTION 6

#### LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Kevan Mann	Sound Seal
Andrew M. Johnston	Intertek B&C
Kurt A. Golden	Intertek B&C

### SECTION 7

#### TEST PROCEDURE

The sensitivity of the microphones was checked before measurements were conducted. Empty room sound absorption measurements were conducted before the specimen was installed. Full room sound absorption measurements were conducted after the specimen was installed.

For the empty and full room measurements, ten decay measurements were conducted at each of the five microphone positions. Data was obtained at 1/3 octave band frequencies ranging from 80 to 5000 hertz. The air temperature and relative humidity conditions were monitored and recorded during the measurements.

Intertek B&C will store samples of test specimens for four years.

### SECTION 8

#### TEST CALCULATIONS

The Sound Absorption Coefficient is the full room absorption minus the empty room absorption divided by the area of the sample in m<sup>2</sup>. The Sound Absorption Coefficient is dimensionless.

The Noise Reduction Coefficient (NRC) rating is the arithmetic average of the sound absorption coefficients at 250, 500, 1000 and 2000 hertz. The average is rounded to the nearest multiple of 0.05.

The Sound Absorption Average (SAA) rating is the arithmetic average of the sound absorption coefficients at the frequencies ranging from 200 to 2500 hertz. The average is rounded to the nearest multiple of 0.01.

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**SECTION 9**

**TEST SPECIMEN DESCRIPTION**

<b>SERIES/MODEL</b>	BioCore
<b>SAMPLE TYPE</b>	Acoustical Wall Panel – 1"
<b>MOUNTING TYPE</b>	F6

Four, 0.61 m by 2.44 m (24" by 96"), and one, 0.30 m by 2.44 m (12" by 96"), panels were arranged to produce the 2.44 m by 2.74 m (96" by 108") test specimen.

The total weight of the test specimen was 27.60 kg (61 lbs).

<b>DESCRIPTION</b>	<b>THICKNESS</b>	<b>DENSITY</b>	<b>WEIGHT</b>
Fabric wrap	0.76 mm 0.030"	367.09 kg/m <sup>3</sup> 24.00 lbs/ft <sup>3</sup>	0.29 kg/m <sup>2</sup> 0.06 lbs/ft <sup>2</sup>
Fiberglass insulation	25.20 mm 0.992"	151.98 kg/m <sup>3</sup> 9.56 lbs/ft <sup>3</sup>	3.83 kg/m <sup>2</sup> 0.79 lbs/ft <sup>2</sup>

Photographs are included in Section 11.

The client did not supply a report drawing of the test specimen.

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**SECTION 10**

**TEST RESULTS**

**M0241.01A DATA**

<b>SPECIMEN AREA</b>	6.69 m <sup>2</sup>	
<b>MOUNTING TYPE</b>	F6	
	<b>EMPTY</b>	<b>FULL</b>
<b>TEMP °C</b>	20.1	20.1
<b>RH %</b>	46	46
<b>B.P. (mb)</b>	1027	1028

<b>FREQ</b> (Hz)	<b>EMPTY ROOM</b> <b>ABSORPTION</b> (m <sup>2</sup> )	<b>UNCERTAINTY</b>	<b>FULL ROOM</b> <b>ABSORPTION</b> (m <sup>2</sup> )	<b>UNCERTAINTY</b>	<b>ABSORPTION</b> <b>COEFFICIENT</b>	<b>RELATIVE</b> <b>UNCERTAINTY</b>
80	5.15	0.433	5.28	0.576	0.02	0.108
100	5.46	0.686	5.45	0.767	0.00	0.154
125	5.64	0.336	6.08	0.367	0.07	0.074
160	5.10	0.109	5.73	0.185	0.09	0.032
200	4.77	0.136	5.82	0.053	0.16	0.022
250	5.19	0.109	6.73	0.098	0.23	0.022
315	5.27	0.054	7.81	0.069	0.38	0.013
400	5.46	0.052	8.81	0.024	0.50	0.008
500	5.58	0.019	9.91	0.267	0.65	0.040
630	5.17	0.022	10.74	0.018	0.83	0.004
800	5.26	0.037	11.41	0.023	0.92	0.006
1000	5.34	0.031	11.94	0.007	0.99	0.005
1250	5.64	0.015	12.58	0.007	1.04	0.003
1600	5.66	0.015	12.86	0.007	1.08	0.003
2000	5.64	0.010	12.72	0.044	1.06	0.007
2500	5.99	0.005	13.48	0.094	1.12	0.014
3150	6.36	0.009	13.44	0.009	1.06	0.002
4000	6.91	0.005	13.88	0.007	1.04	0.001
5000	7.54	0.008	14.44	0.005	1.03	0.001

<b>NRC RATING</b>	0.75	<i>(Noise Reduction Coefficient)</i>
<b>SAA RATING</b>	0.75	<i>(Sound Absorption Average)</i>

Notes:

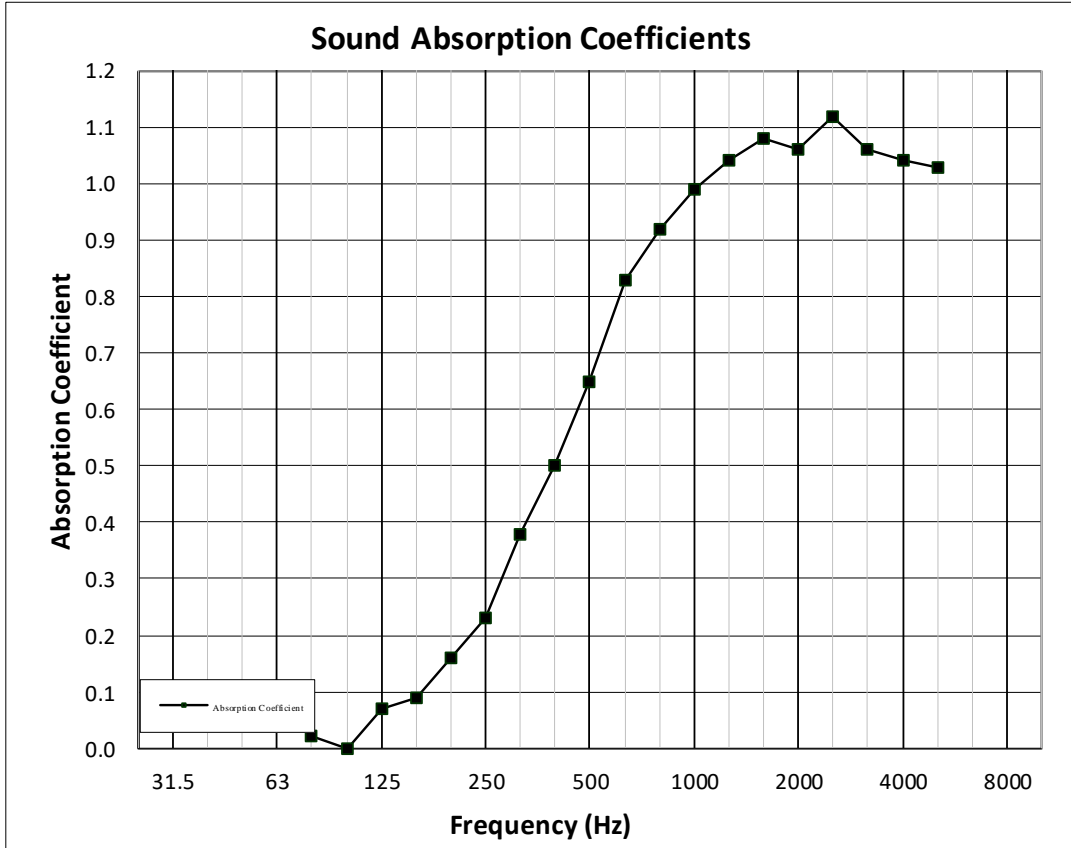
- 1) The NRC rating is the arithmetic average of the sound absorption coefficients at 250, 500, 1000, and 2000 hertz. The average is rounded to the nearest multiple of 0.05.
- 2) The SAA rating is the arithmetic average of the sound absorption coefficients at the frequencies ranging from 200 to 2500 hertz. The average is rounded to the nearest multiple of 0.01.

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### M0241.01A GRAPH





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### SECTION 11

### PHOTOGRAPHS



**Photo No. 1**  
**View of Installed Test Specimen**



**Photo No. 2**  
**Close-up View of Installed Test Specimen**



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**SECTION 12**

**REVISION LOG**

REVISION #	DATE	PAGES	REVISION
0	04/15/21	N/A	Original Report Issue – Reissue of Report M0241.01-113-11 in the name of Sound Seal.