

FADDIS CONCRETE PRODUCTS ACOUSTICAL PERFORMANCE TEST REPORT

SCOPE OF WORK

ASTM C423 SOUND ABSORPTION TESTING ON ACOUSTAL SURFACE MOUNTED SOUND
ABSORPTION PANELS

REPORT NUMBER

M0378.01-113-11-R0

TEST DATE

08/24/21

ISSUE DATE

08/27/21

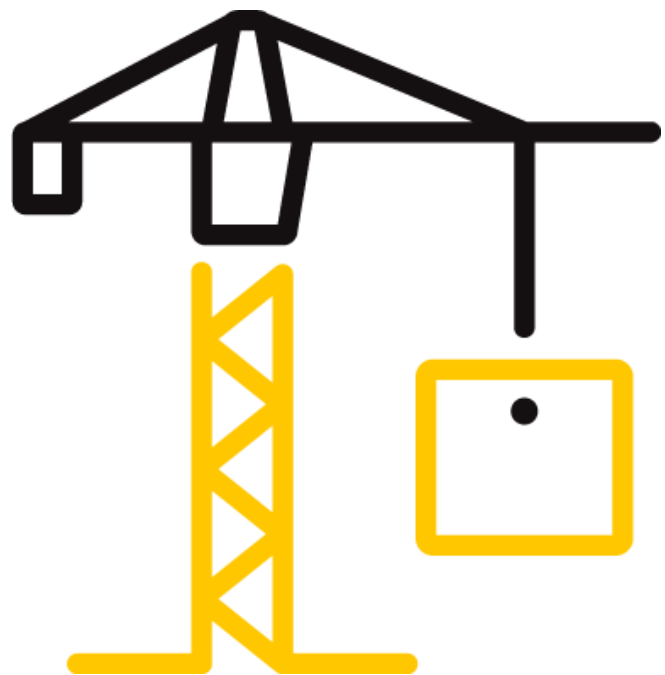
PAGES

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DOCUMENT CONTROL NUMBER

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

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TEST REPORT FOR FADDIS CONCRETE PRODUCTS

Report No.: M0378.01-113-11-R0

Date: 08/27/21

REPORT ISSUED TO

FADDIS CONCRETE PRODUCTS

2206 Horseshoe Pike
Honeybrook, Pennsylvania 19344

SECTION 1

SCOPE

Architectural Testing, Inc. (an Intertek company) dba Intertek Building & Construction (B&C) was contracted by Faddis Concrete Products to perform a sound absorption test. Results obtained are tested values and were secured by using the designated test methods. The complete test data is included herein. The 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:

COMPLETED BY:	Andrew M. Johnston	REVIEWED BY:	Kurt A. Golden
TITLE:	Technician Acoustical Testing	TITLE:	Project Lead Acoustical Testing
SIGNATURE:		SIGNATURE:	
DATE:	08/27/21	DATE:	08/27/21

AMJ:jmcs

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SECTION 2

SUMMARY OF TEST RESULTS

SERIES/MODEL	AcoustAL surface mounted sound absorption panel							
MOUNTING TYPE	Type A							
DATA FILE NO.	1/3 OCTAVE SOUND ABSORPTION COEFFICIENTS AT THE OCTAVE BAND FREQUENCIES						NRC	SAA
	125	250	500	1000	2000	4000		
M0378.01A	0.05	0.24	0.73	1.06	1.02	0.85	0.75	0.77

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 A mounting, the test specimen was placed directly against 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 per client request.

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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	378C20	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	04/21

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

TEST CHAMBER

	VOLUME	DESCRIPTION
RECEIVE ROOM	234 m ³	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
Andrew M. Johnston	Intertek B&C
Zachary P. 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.

The test specimen was returned per the clients' request.

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 m². 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

SERIES/MODEL	AcoustAL surface mounted sound absorption panel
MOUNTING TYPE	Type A

Nine, 0.31 m by 2.39 m (12" by 94"), panels were arranged to produce the 2.39 m by 2.76 m (94" by 108-3/4") test specimen. Each aluminum face sheet perforation section measured 5" by 10" with 617 perforations. Each panel contained 16 perforated sections. The total weight of the specimen was 44.91 kg (99 lbs).

Client Description*

AcoustAL surface mounted sound absorption panel comprised of 12" wide, roll formed, and powder coated perforated aluminum face. Aluminum face sheet perforation pattern 5/32" on 5/16" staggered centers over one-inch-thick nominal 8 lb density mineral wool insulation.

DESCRIPTION	THICKNESS	DENSITY	WEIGHT
1" Mineral wool insulation	25.30 mm	94.47 kg/m ³	02.39 kg/m ²
	0.996"	5.90 lbs/ft ³	0.49 lbs/ft ²

* - Stated per Client/Manufacturer

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

M0378.01A DATA

SPECIMEN AREA	6.6 m ²	
MOUNTING TYPE	Type A	
	EMPTY	FULL
TEMP °C	22.2	23.1
RH %	45	47
B.P. (mb)	985	986

FREQ (Hz)	EMPTY ROOM ABSORPTION (m ²)	UNCERTAINTY	FULL ROOM ABSORPTION (m ²)	UNCERTAINTY	ABSORPTION COEFFICIENT	RELATIVE UNCERTAINTY
80	5.30	0.432	5.71	0.384	0.06	0.088
100	5.71	0.519	5.78	0.409	0.01	0.100
125	5.51	0.379	5.87	0.398	0.05	0.083
160	5.07	0.089	5.72	0.207	0.10	0.034
200	4.87	0.121	5.78	0.073	0.14	0.021
250	5.25	0.054	6.83	0.078	0.24	0.014
315	5.36	0.059	8.06	0.048	0.41	0.011
400	5.56	0.059	8.95	0.084	0.51	0.016
500	5.76	0.037	10.60	0.342	0.73	0.052
630	5.33	0.049	11.71	0.039	0.97	0.010
800	5.43	0.043	12.17	0.025	1.02	0.008
1000	5.51	0.017	12.47	0.023	1.06	0.004
1250	5.83	0.018	12.93	0.019	1.08	0.004
1600	5.86	0.014	12.88	0.014	1.06	0.003
2000	5.87	0.014	12.58	0.017	1.02	0.003
2500	6.16	0.009	12.80	0.077	1.01	0.012
3150	6.51	0.008	12.57	0.014	0.92	0.002
4000	6.95	0.008	12.53	0.006	0.85	0.002
5000	7.35	0.004	12.50	0.005	0.78	0.001

NRC RATING	0.75	<i>(Noise Reduction Coefficient)</i>
SAA RATING	0.77	<i>(Sound Absorption Average)</i>

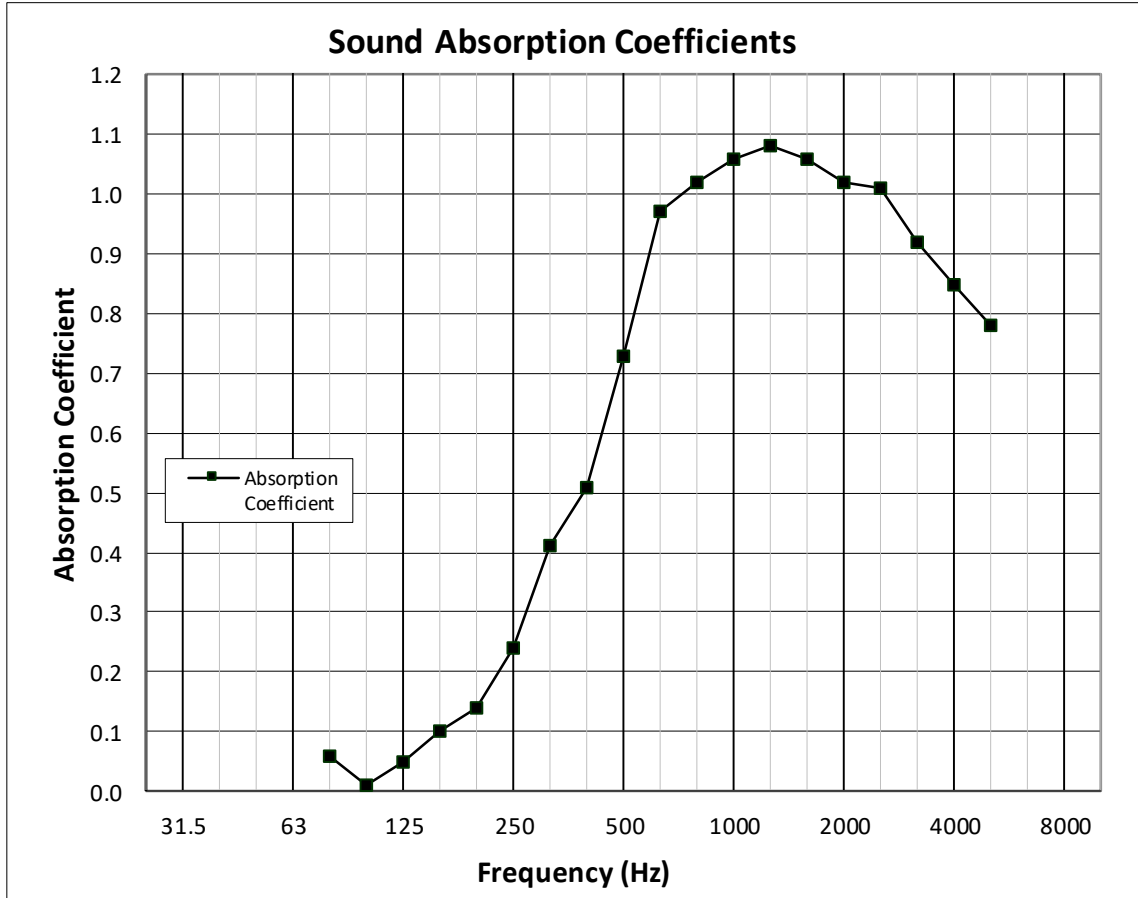
Notes: 1) The NRC rating is the arithmetic average of the sound absorption coefficients at 250, 500, 1000, and 2000 hertz. The average is rounded to the nearest multiple of 0.05.
2) The SAA rating is the arithmetic average of the sound absorption coefficients at the frequencies ranging from 200 to 2500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

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M0378.01A GRAPH



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SECTION 11

PHOTOGRAPHS

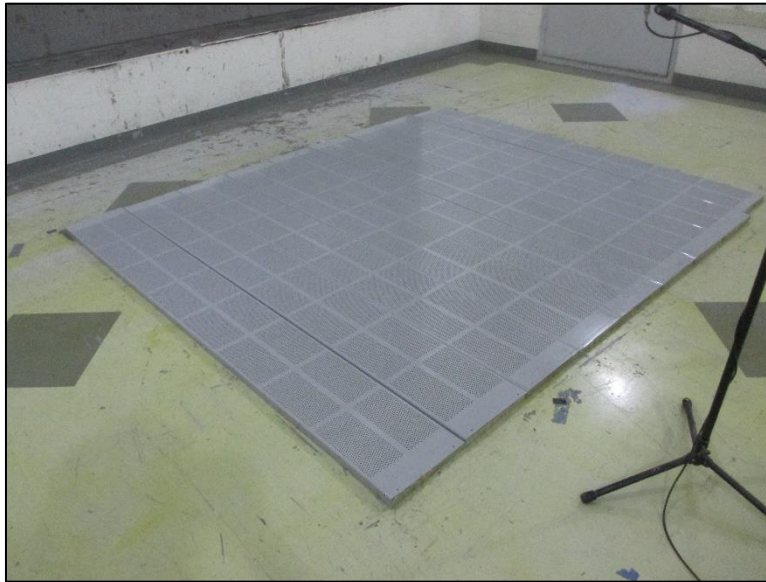


Photo No. 1
View of Installed Test Specimen



Photo No. 2
Close Up View of Installed Test Specimen



Total Quality. Assured.

130 Derry Court
York, Pennsylvania 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
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SECTION 12

REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	08/27/21	N/A	Original Report Issue