

LOFTWALL, INC. ACOUSTICAL PERFORMANCE TEST REPORT

SCOPE OF WORK

ASTM C423 SOUND ABSORPTION TESTING ON TEMPO CEILING, PET PANELS

REPORT NUMBER

Q3730.01-113-11-R0

TEST DATE

09/05/23

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10/19/23

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TEST REPORT FOR LOFTWALL, INC.

Report No.: Q3730.01-113-11-R0

Date: 10/19/23

REPORT ISSUED TO

LOFTWALL, INC.

2617 North Great Southwest Parkway, Suite 100

Grand Prairie, Texas 75050

SECTION 1

SCOPE

Architectural Testing, Inc. (an Intertek company) dba Intertek Building & Construction (B&C) was contracted by LOFTwall, Inc. 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:	Zachary P. Golden	REVIEWED BY:	Kurt A. Golden
TITLE:	Technician Team Leader Acoustical Testing	TITLE:	Manager Acoustical Testing
SIGNATURE:	 <small>Digitally Signed by: Zachary Golden</small>	SIGNATURE:	 <small>Digitally Signed by: Kurt A. Golden</small>
DATE:	10/19/23	DATE:	10/19/23

ZPG:jmcs

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SECTION 2

SUMMARY OF TEST RESULTS

SERIES/MODEL	Tempo Ceiling							
SAMPLE TYPE	PET Panels, 3/8" Thick							
MOUNTING TYPE	Type J Array							
DATA FILE NO.	1/3 OCTAVE SOUND ABSORPTION COEFFICIENTS (ABSORPTION/ M ²) AT THE OCTAVE BAND FREQUENCIES						NRC	SAA
	125	250	500	1000	2000	4000		
Q3730.01	0.16	0.44	0.78	1.14	1.41	2.01	0.95	0.98

SECTION 3

TEST METHODS

The specimens were evaluated in accordance with the following:

ASTM C423-23, *Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method*

ASTM E795-23, *Standard Practices for Mounting Test Specimens During Sound Absorption Tests*

SECTION 4

SPECIMEN MOUNTING

For the Type J Array mounting, the test panels were hung vertically by their edges, 0.61 m (24") from the floor of the reverberation room.

The panels were arranged in seven rows of two with 0.08 m (3") between each row and 0.15 m (5-3/4") between each panel edge. A diagram of the panel arrangement is included in Section 12.

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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
2-Channel Analog Input	National Instruments	NI-9250	2-Channel Analog Input	INT02674	09/22
2-Channel Analog Input	National Instruments	NI-9250	2-Channel Analog Input	INT02675	09/22
2-Channel Analog Input	National Instruments	NI-9250	2-Channel Analog Input	INT02676	09/22
Receive Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	65969	03/23
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64908	01/23
Receive Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	INT03436	04/23
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64907	01/23
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	63745	07/23
Receive Room Environmental Indicator	Comet	T7510	Receive Room	64914	03/23
Microphone Calibrator	Norsonic	Nor 1255	Acoustical Calibrator	INT03566	06/23

*- 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

SECTION 6 LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Zachary P. Golden	Intertek B&C

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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 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 frequencies ranging from 200 to 2500 hertz. The average is rounded to the nearest multiple of 0.01.

Sound absorption per M² (SA/ M²), and therefore the reported Single Number Ratings, are highly dependent on the exact sample shape, size, spacing, and extended continuous surface area present in the test and subsequent calculations. Changes to any of these parameters will change the resulting values. These presented results are valid only for the specific configuration present in the test.

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SECTION 9

TEST SPECIMEN DESCRIPTION

SERIES/MODEL	Tempo Ceiling
SAMPLE TYPE	PET Panels, 3/8" Thick
MOUNTING TYPE	Type J Array

Fourteen, 1.20 m by 0.30 m (47-1/4" by 12"), panels were arranged to produce the test specimen.

The total weight of the specimen was 9.80 kg (21.60 lbs).

DESCRIPTION	THICKNESS	DENSITY	WEIGHT
PET Panel, 3/8" Thick	9.40 mm	212.77 kg/m ³	2.00 kg/m ²
	0.37"	13.30 lbs/ft ³	0.41 lbs/ft ²

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

Q3730.01 DATA

TECHNICIAN	Zachary P. Golden	
SPECIMEN ARRAY	2.78 m ²	
MOUNTING TYPE	Array J	
	EMPTY	FULL
TEMP °C	22.3	23.1
RH %	51	48
B.P. (mb)	999	999

FREQ (Hz)	EMPTY ROOM ABSORPTION (m ²)	FULL ROOM ABSORPTION (m ²)	ABSORPTION PER m² (SA/m ²)
80	6.25	5.89	0.00
100	6.41	6.74	0.12
125	5.70	6.14	0.16
160	5.03	5.45	0.15
200	5.39	6.15	0.27
250	5.71	6.92	0.44
315	5.35	7.17	0.65
400	5.15	7.12	0.71
500	5.05	7.21	0.78
630	5.01	7.60	0.93
800	5.26	8.19	1.05
1000	5.14	8.31	1.14
1250	5.32	8.69	1.21
1600	5.36	9.04	1.32
2000	5.31	9.24	1.41
2500	5.69	10.81	1.84
3150	6.33	11.49	1.85
4000	6.88	12.46	2.01
5000	7.30	13.19	2.12

Array-NRC	0.95	<i>Array-(Noise Reduction Coefficient)</i>
Array-SAA	0.98	<i>Array-(Sound Absorption Average)</i>

Notes:

1) The Array-NRC rating is the arithmetic average of the sound absorption per m² at 250, 500, 1000, and 2000 hertz. The average is rounded to the nearest multiple of 0.05.

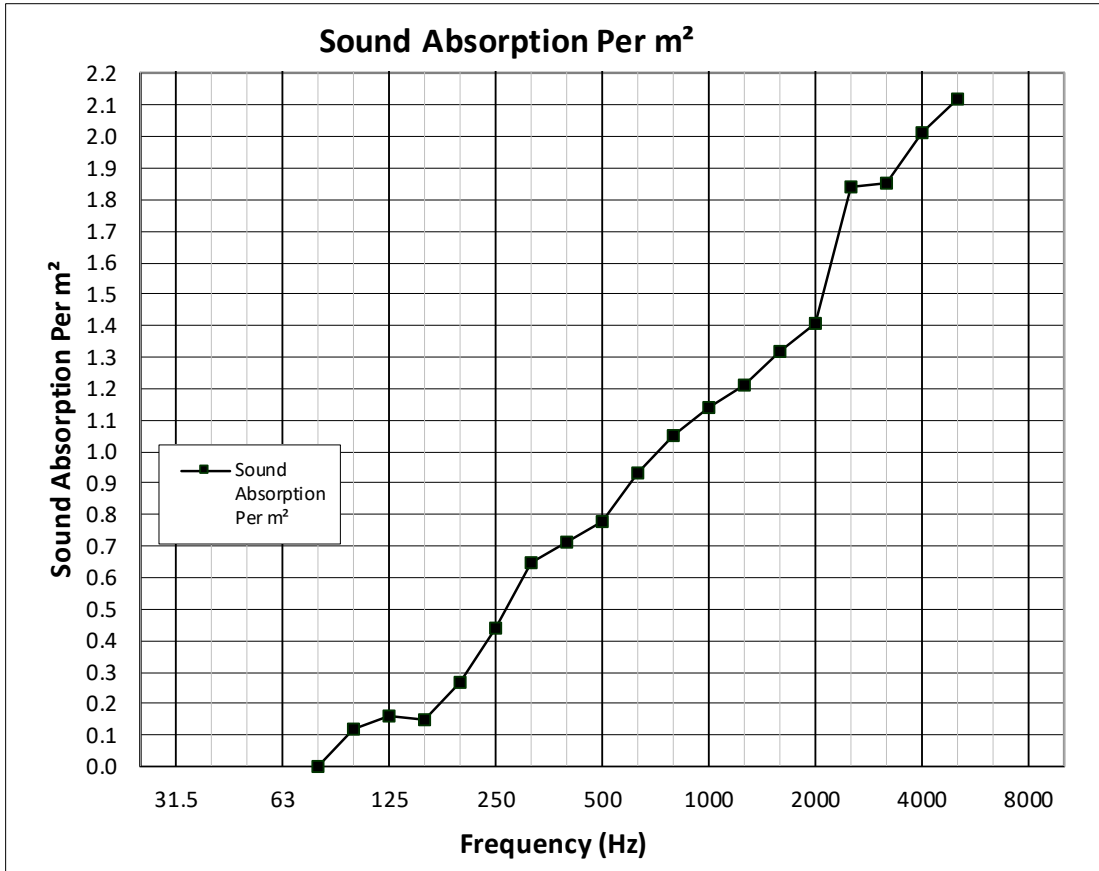
2) The Array-SAA rating is the arithmetic average of the sound absorption per m² at the frequencies ranging from 200 to 2500 hertz. The average is rounded to the nearest multiple of 0.01.

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Q3730.01 GRAPH



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SECTION 11

PHOTOGRAPHS



Photo No. 1
View of Installed Test Specimen



Photo No. 2
Side View of Test Specimen

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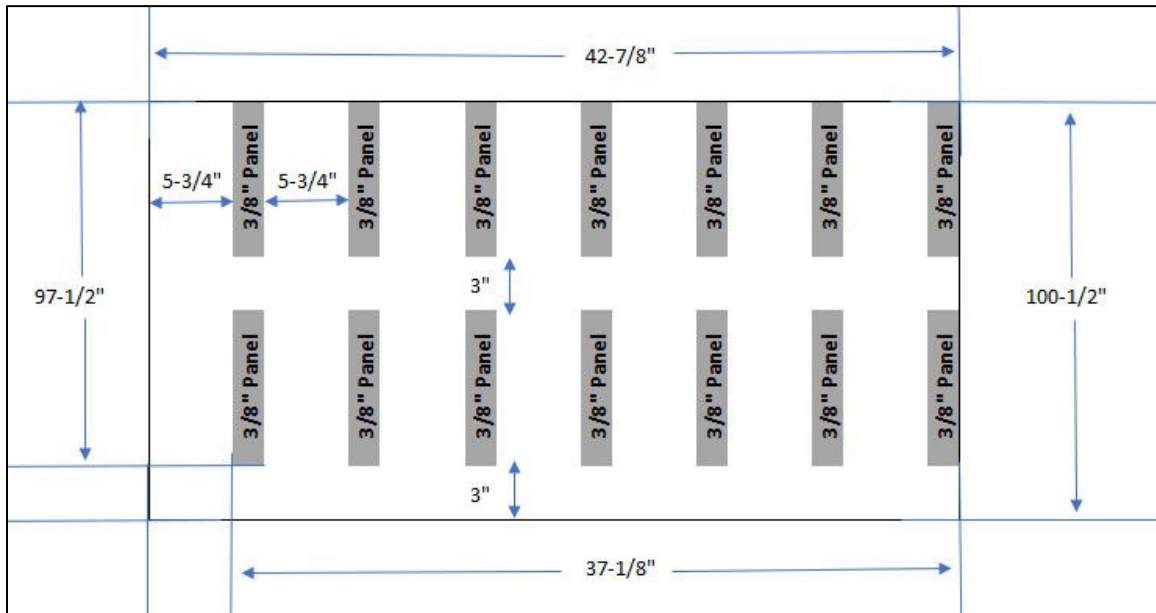
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SECTION 12

DIAGRAM

TYPE J ARRAY AREA FOOTPRINT ENCOMPASSING THE 14 PANEL CONFIGURATION CALCULATION





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130 Derry Court
York, Pennsylvania 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

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SECTION 13

REVISION LOG

REVISION #	DATE	PAGES	REVISION
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