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NOVAWALL SYSTEMS, INC.
ACOUSTICAL PERFORMANCE TEST REPORT

SCOPE OF WORK
ASTM C423 SOUND ABSORPTION TESTING ON A NOVAWALL VT, ABSORPTION AND BAFFLE SYSTEM

REPORT NUMBER
I1641.02-113-11-R0

TEST DATE
03/16/18

ISSUE DATE
03/26/18

RECORD RETENTION END DATE
03/16/22

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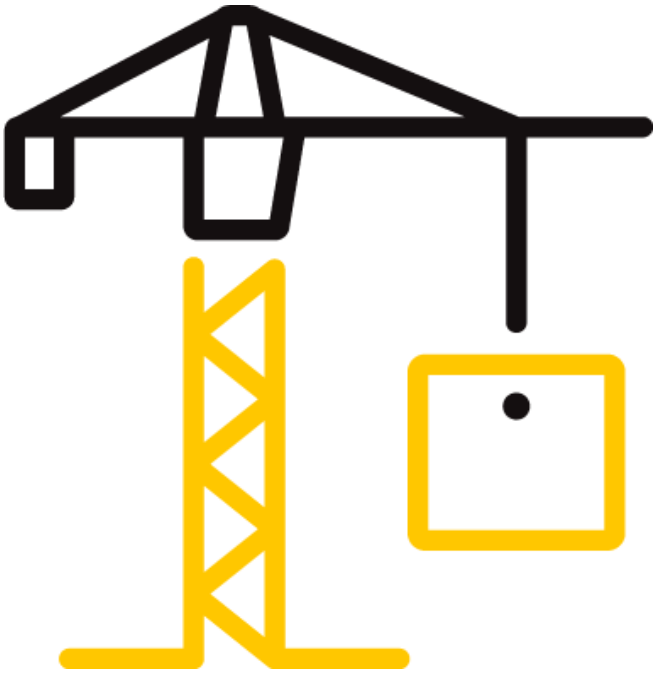

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TEST REPORT FOR NOVAWALL SYSTEMS, INC.
Report No.: I1641.02-113-11-R0
Date: 03/26/18

REPORT ISSUED TO
NOVAWALL SYSTEMS, INC.
885-B South Pickett Street
Alexandria, Virginia 22304

SECTION 1
SCOPE

Intertek Building & Construction (B&C) was contracted by Novawall Systems, Inc. to perform a sound absorption test. Results obtained are tested values and were secured by using the designated test method(s). 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.

SECTION 2
SUMMARY OF TEST RESULTS

SERIES/MODEL	Novawall VT							
SAMPLE TYPE	Absorption and baffle system							
MOUNTING TYPE	Type F5							
DATA FILE NO.	**1/3 OCTAVE SOUND ABSORPTION COEFFICIENTS**						**NRC**	**SAA**
	125	**250**	**500**	**1000**	**2000**	**4000**		
I1641.02	0.06	0.25	0.72	1.01	0.95	0.97	0.75	0.74

For INTERTEK B&C:

COMPLETED BY:	Daniel J. Poet	**REVIEWED BY:**	Kurt A. Golden
TITLE:	Technician II Acoustical Testing	**TITLE:**	Project Lead Acoustical Testing
SIGNATURE:	Daniel Poet Digitally Signed by: Daniel Poet	**SIGNATURE:**	Kurt A. Golden Digitally Signed by: Kurt A. Golden
DATE:	03/26/18	**DATE:**	03/26/18

DJP:jmcs

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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 F5 mounting, the test specimen was placed on spacers 5 mm from the floor of the reverberation room with the absorptive side facing the sound field to simulate normal use of product.

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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 #	DATE OF CALIBRATION
Data Acquisition Card	National Instruments	PXI-4462	Data Acquisition Card	65124	06/16 *
Data Acquisition Card	National Instruments	PXI-4462	Data Acquisition Card	65126	05/16 *
Data Acquisition Card	National Instruments	PXI-4462	Data Acquisition Card	65125	05/16 *
Receive Room Microphone	PBC Piezotronics	378B20	Microphone and Preamplifier	64907	12/17
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64908	12/17
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64909	12/17
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64910	12/17
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64911	01/18
Receive Room Environmental Indicator	Comet	T7510	Receive Room	64915	03/18
Microphone Calibrator	Norsonic	1251	Pistonphone Calibrator	Y002929	04/17

**- 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

N/A Not Applicable

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SECTION 6
LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Jear Mutunda	Intertek B&C
Kurt 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^2. 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

Four, 1.22 m by 1.22 m (48" by 48"), panels were arranged 0.92 m (36") off of the floor and 0.46m (18") apart from each other. The total weight of the specimen was 38.10 kg (84 lbs). Photographs are included in Section 12. The client did not supply a report drawing of the test specimen.

*The Novawall VT Panel and Baffle system is comprised of 1-1/2" thick perimeter aluminium frame with 1" Novawall Classic track, 1" thick 6PCF rigid acoustical fiberglass covered in Guilford of Maine fabric.

INFILL MEASUREMENTS/DESCRIPTION	THICKNESS	DENSITY	WEIGHT
1" Thick 6 PCF Rigid acoustical fiberglass*	25.65 mm	6.06 lbs/ft3	0.51 lbs/ft2
	1.01"	9.71 kg/m^3	2.47 kg/m^2

** - Stated per Client/Manufacturer*

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SECTION 10
TEST RESULTS

I1641.02 DATA

SPECIMEN AREA	6.69 m²	
MOUNTING TYPE	F5	
	EMPTY	**FULL**
TEMP °C	21.2	21.2
RH %	53	50
B.P. (mb)	984	984

FREQ (Hz)	**EMPTY ROOM ABSORPTION** (m^2)	**UNCERTAINTY**	**FULL ROOM ABSORPTION** (m^2)	**UNCERTAINTY**	**ABSORPTION COEFFICIENT**	**RELATIVE UNCERTAINTY**
80	4.24	0.519	4.28	0.564	0.01	0.115
100	4.80	0.328	5.05	0.375	0.04	0.074
125	4.96	0.267	5.37	0.298	0.06	0.060
160	4.40	0.160	4.99	0.173	0.09	0.035
200	4.36	0.146	5.45	0.104	0.16	0.027
250	5.02	0.078	6.67	0.095	0.25	0.018
315	5.09	0.064	7.80	0.069	0.41	0.014
400	5.27	0.033	9.00	0.046	0.56	0.008
500	5.19	0.021	9.99	0.248	0.72	0.037
630	4.90	0.026	10.79	0.015	0.88	0.004
800	5.09	0.027	11.58	0.013	0.97	0.004
1000	5.09	0.032	11.88	0.015	1.01	0.005
1250	5.42	0.031	12.16	0.016	1.01	0.005
1600	5.48	0.024	12.02	0.004	0.98	0.004
2000	5.43	0.021	11.76	0.022	0.95	0.005
2500	5.66	0.008	12.37	0.116	1.00	0.017
3150	6.30	0.013	12.61	0.004	0.94	0.002
4000	6.67	0.012	13.18	0.005	0.97	0.002
5000	7.24	0.005	14.04	0.005	1.02	0.001

NRC RATING	0.75	*(Noise Reduction Coefficient)*
SAA RATING	0.74	*(Sound Absorption Average)*

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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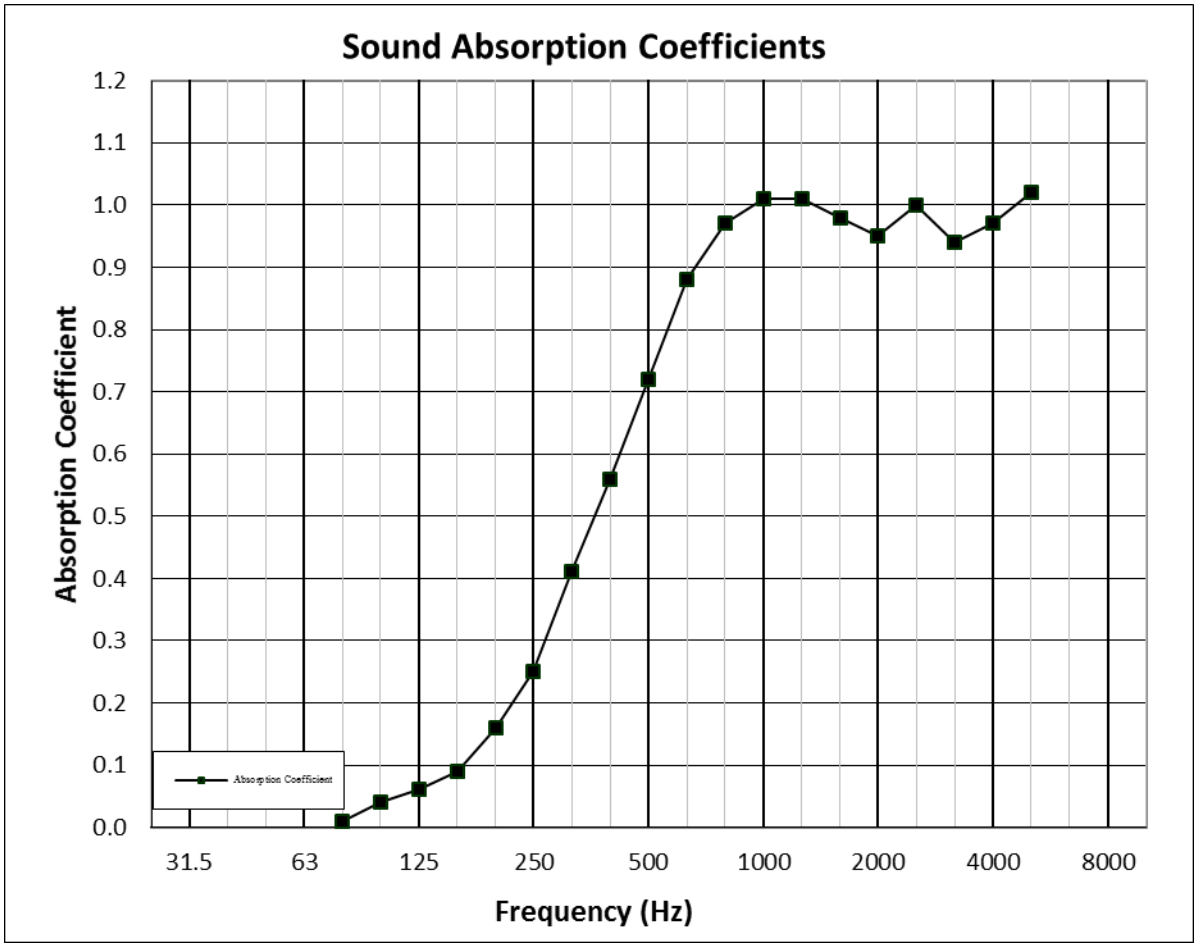
I1641.02 GRAPH



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SECTION 11
PHOTOGRAPHS

Photo No. 1
View of Installed Specimen

Photo No. 2
Cross Section View of Specimen

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SECTION 12
REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	03/26/18	N/A	Original Report Issue