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ASTM C 423 SOUND ABSORPTION TEST REPORT

Rendered to:

NOVAWALL SYSTEMS, INC.

SERIES/MODEL: 3/4" Weltless

TYPE: Stretch Fabric Wall System

Summary of Test Results								
Sample ID Number & Sample Description	**1/3 Octave Sound Absorption Coefficients or at the Octave Band Frequencies**						**NRC**	**SAA**
	125	**250**	**500**	**1000**	**2000**	**4000**		
E0783.01 Series/Model 3/4" Weltless, stretch fabric wall system	0.02	0.23	0.77	0.97	1.01	1.00	0.75	0.76

Reference should be made to Architectural Testing, Inc. Report No. E0783.01-113-11 for complete test specimen description. The complete test results are listed in Appendix B.

ACOUSTICAL PERFORMANCE TEST REPORT

Rendered to:

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

Report No:	E0783.01-113-11
Test Date:	08/25/14
Report Date:	09/11/14
Record Retention End Date:	08/25/18

Test Sample Identification:

Series/Model: 3/4" Weltless

Type: Stretch Fabric Wall System

Overall Size: 2.44 m by 2.74 m (8' by 9')

Project Summary: Architectural Testing, Inc. was contracted by Novawall Systems, Inc. to conduct a sound absorption test on a Series/Model 3/4" Weltless, stretch fabric wall system. A summary of the results is listed in the Test Results section, and the complete test data is included as Appendix B of this report. The sample was provided by the client.

Test Methods: The acoustical test was conducted in accordance with the following:

ASTM C 423-09a, *Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method*.

ASTM E 795-05 (2012), *Standard Practices for Mounting Test Specimens During Sound Absorption Tests*.

Test Equipment: The equipment used to conduct these tests meets the requirements of ASTM C 423. The microphone was calibrated before conducting the sound absorption test. The test equipment and test chamber descriptions are listed in Appendix A.

Test Procedure: The sound absorption of the reverberation chamber was measured before the test specimen was installed. This measurement shall be referred to as the empty room test. For the Type A mounting, the test specimen was placed directly against the test surface (floor) of the reverberation room with the absorptive side exposed to the sound field. The perimeter of the sample was sealed to the floor with aluminum angle and duct tape. The sound absorption test was then re-run. The absorption measurement with the specimen inside the chamber shall be referred to as the full room test.

For the empty and full room tests, ten decay measurements were conducted at each of the five microphone positions. The sound absorption test was conducted 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 empty and full room measurements.

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.

Sample Description:

Material Description	Average Thickness		Average Density		Average Weight	
Fabric	0.61 mm	0.02 "	865.08 kg/m^3	54.00 pcf	0.44 kg/m^2	0.09 psf
Fiberglass	22.81 mm	0.90 "	83.30 kg/m^3	5.20 pcf	1.88 kg/m^2	0.39 psf
Gypsum Board	16.05 mm	0.63 "	748.13 kg/m^3	46.70 pcf	11.96 kg/m^2	2.45 psf

The test sample consisted of two, 1.22 m by 2.44 m (48" by 96") panels, and one, 0.31 m by 2.44 m (12" by 96") panel, which were arranged to produce a 2.44 m by 2.74 m (8' by 9') sample. The total weight of the sample was 95.84 kg (211.3 lbs). Photographs of the sample test setup are included in Appendix C.

Comments: The client did not supply report drawings on the Series/Model 3/4" Weltless, stretch fabric wall system. The specimen was disassembled, and the components will be retained by Architectural Testing for four years.

Test Results: A summary of the sound absorption tests is listed below:

Summary of Test Results								
Sample ID Number & Sample Description	**1/3 Octave Sound Absorption Coefficients at the Octave Band Frequencies**						**NRC**	**SAA**
	125	**250**	**500**	**1000**	**2000**	**4000**		
E0783.01 Series/Model 3/4" Weltless, stretch fabric wall system	0.02	0.23	0.77	0.97	1.01	1.00	0.75	0.76

The complete test results are listed in Appendix B. The acoustical chamber is qualified down to 80 hertz. Data provided below this frequency is for reference only.

Architectural Testing will service this report for the entire test record retention period. Test records, such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation, will be retained by Architectural Testing for the entire test record retention period.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. It is the exclusive property of the client so named herein and relates only to the specimen tested. This report may not be reproduced, except in full, without the written approval of Architectural Testing.

For ARCHITECTURAL TESTING, INC:

Digitally Signed by: Eric Thompson

Eric A. Thompson
Technician - Acoustical Testing

Digitally Signed for: Todd Kister by Eric J. Miller

Todd D. Kister
Laboratory Supervisor - Acoustical Testing

EAT:jmcs

Attachments (pages): This report is complete only when all attachments listed are included.
Appendix-A: Equipment description (1)
Appendix-B: Complete test results (2)
Appendix-C: Photographs (1)

Revision Log

Rev. #	Date	Page(s)	Revision(s)
0	09/11/14	N/A	Original Report Issue

Appendix A

Instrumentation

Instrument	Manufacturer	Model	ATI Number	Date of Calibration
Data Acquisition Unit	National Instruments	PXI-1033	65217	05/14 *
Receive Room Microphone	PCB Piezotronics	378B20	64907	11/13
Receive Room Microphone	PCB Piezotronics	378B20	64908	11/13
Receive Room Microphone	PCB Piezotronics	378B20	64909	11/13
Receive Room Microphone	PCB Piezotronics	378B20	64910	11/13
Receive Room Microphone	PCB Piezotronics	378B20	64911	11/13
Receive Room Environmental Indicator	Vaisala	HMW92	64286	06/14
Microphone Calibrator	Norsonic	1251	65105	04/14

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

Test Chambers

HT Receive Room Volume	234 m

Appendix B

Complete Test Results

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IAS ACCREDITED TL-144

SOUND ABSORPTION

ASTM C 423

Test Date	08/25/14	
ATI No.	E0783.01	
Client	Novawall Systems, Inc.	
Specimen	3/4" Weltless, stretch fabric wall system	
Operator	EAT	
Sample Area	6.69 m^2	
Mounting Type	A	
	Empty	Full
Temp C	22	22
RH %	45	45
B.P. (mb)	1013	

Freq (Hz)	Empty Room Absorption (m^2)	Uncertainty	Full Room Absorption (m^2)	Uncertainty	Absorption Coefficient	Relative Uncertainty
80	4.06	0.577	4.33	0.546	0.04	0.119
100	4.48	0.593	4.60	0.641	0.02	0.131
125	4.59	0.152	4.75	0.360	0.02	0.058
160	4.09	0.209	4.68	0.267	0.09	0.051
200	4.22	0.094	5.16	0.180	0.14	0.030
250	4.74	0.055	6.28	0.079	0.23	0.014
315	4.71	0.079	7.49	0.054	0.42	0.014
400	4.78	0.049	8.86	0.106	0.61	0.018
500	4.89	0.042	10.04	0.275	0.77	0.042
630	4.52	0.056	10.43	0.027	0.88	0.009
800	4.57	0.014	10.88	0.039	0.94	0.006
1000	4.64	0.026	11.14	0.011	0.97	0.004
1250	5.06	0.033	11.82	0.016	1.01	0.006
1600	5.04	0.007	11.88	0.015	1.02	0.003
2000	4.85	0.020	11.61	0.041	1.01	0.007
2500	5.04	0.022	12.15	0.126	1.06	0.019
3150	5.48	0.010	12.29	0.009	1.02	0.002
4000	5.68	0.008	12.37	0.007	1.00	0.002
5000	5.69	0.007	12.47	0.009	1.01	0.002

NRC Rating **0.75** *(Noise Reduction Coefficient)*
SAA Rating **0.76** *(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.

SOUND ABSORPTION

ASTM C 423

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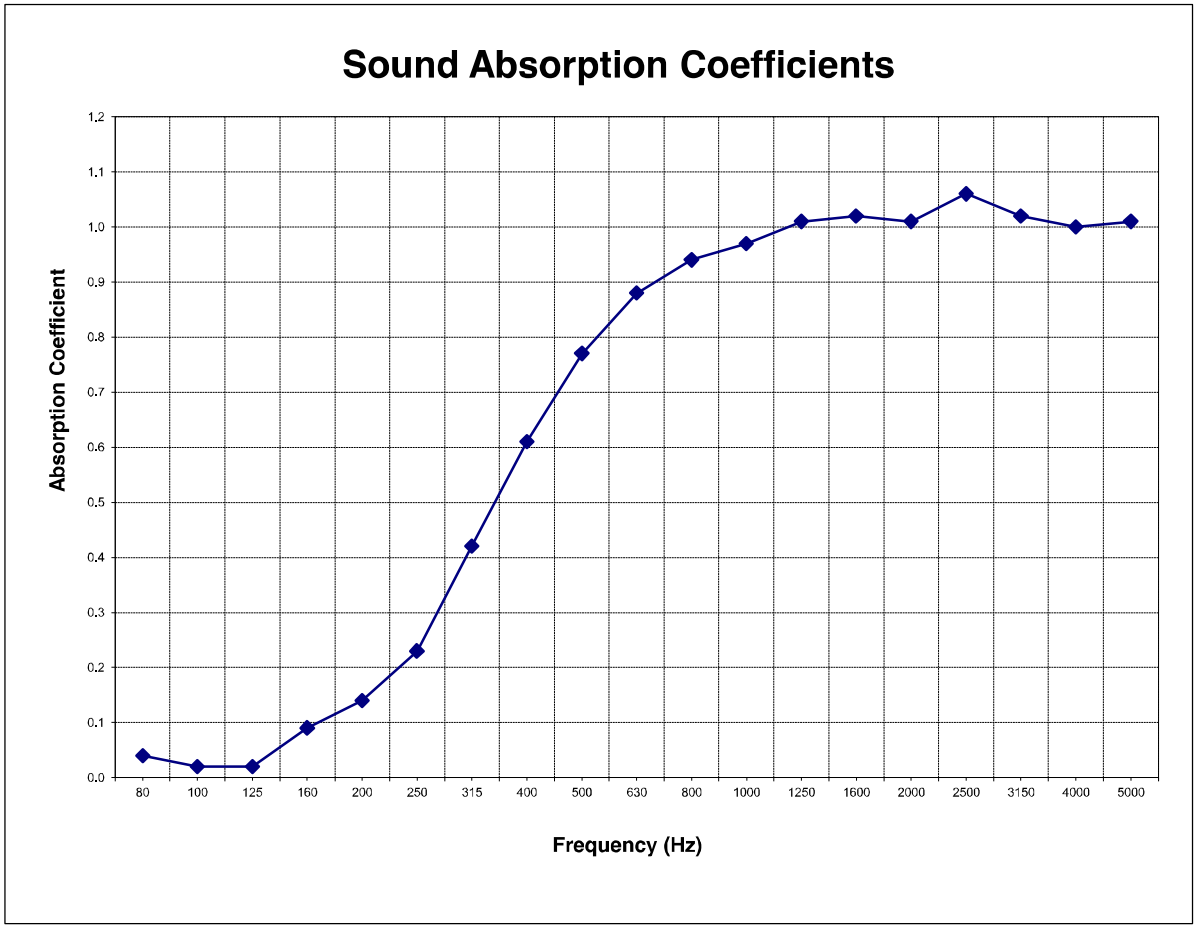
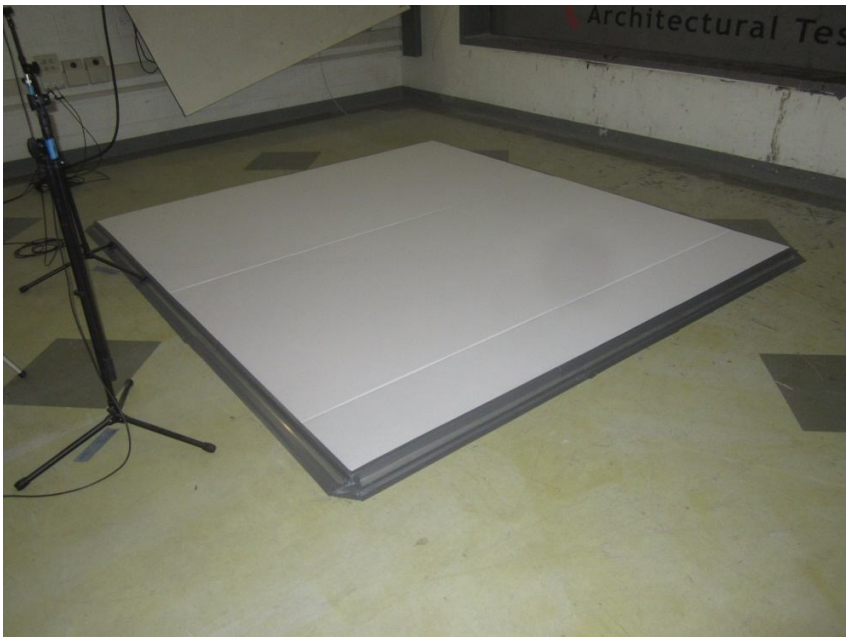
Client	Novawall Systems, Inc.	
Specimen	3/4" Weltless, stretch fabric wall system	
Operator	EAT	
Sample Area	6.69 m^2	
Mounting Type	A	
	Empty	Full
Temp C	22.0	22.0
RH %	45	45
B.P. (mb)	1013	

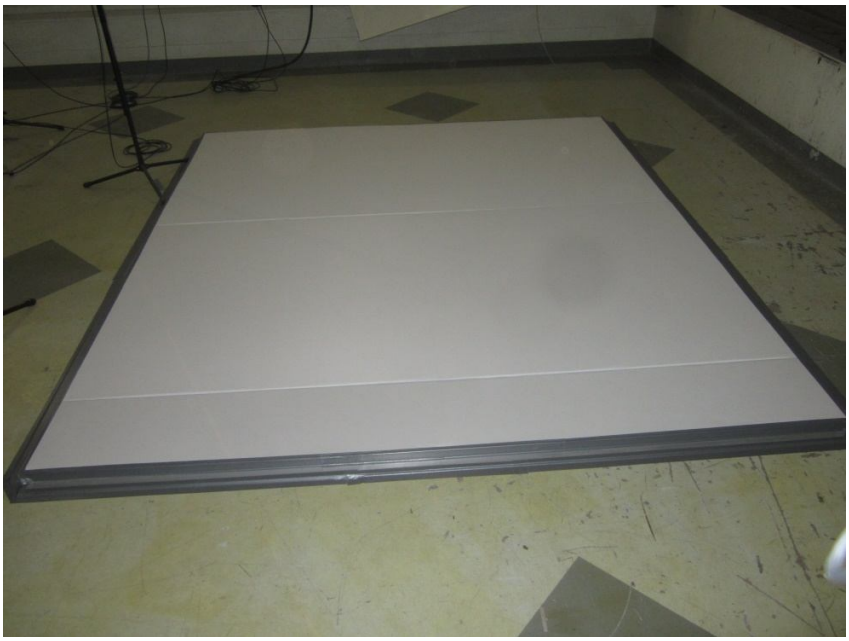


Appendix C

Photographs



View of Installed 3/4" Weltless, Stretch Fabric Wall System



View of Installed 3/4" Weltless, Stretch Fabric Wall System