



**G2866.01-113-11-R0**  
**ACOUSTICAL PERFORMANCE TEST REPORT**  
**ASTM C423**

**Rendered to**

**NOVAWALL SYSTEMS, INC.**

**SERIES/MODEL: Novawall Novaspan16**

**TYPE: Stretch Fabric Wall System**

Summary of Test Results								
Data File No.	1/3 Octave Sound Absorption Coefficients at the Octave Band Frequencies						NRC	SAA
	125	250	500	1000	2000	4000		
G2866.01A	0.06	0.33	0.84	1.01	1.03	0.99	0.80	0.81
G2866.01B	0.22	0.87	1.08	1.03	1.00	1.00	1.00	0.99

Reference should be made to Intertek-ATI Report No. G2866.01-113-11 for complete test specimen description. This page alone is not a complete report.



## Acoustical Performance Test Report

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

Report	G2866.01-113-11
Test Date	09/20/16
Report Date	09/27/16

### Project Scope

Architectural Testing, Inc., an Intertek company ("Intertek-ATI"), was contracted to conduct a sound absorption test. The complete test data is included as Appendix B of this report. The client provided the test specimen.

### Test Methods

Testing for this project was conducted in accordance with the following standards. The equipment listed in the attachments meets the requirements of the following standards.

ASTM C423-09a, *Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method*

ASTM E795-05 (2012), *Standard Practices for Mounting Test Specimens During Sound Absorption Tests*

### Test Procedure

All measurements were conducted in the HT test chamber receive room at Intertek-ATI located in York, Pennsylvania. 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.

### 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 sealed to the floor with aluminum angle and duct tape.

## 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.

The Sound Absorption Coefficient is the full room absorption minus the empty room absorption divided by the number of units being tested. The Sound Absorption Coefficient is dimensionless.

## Specimen Descriptions

### Option A - 1" Stretch Fabric Wall System Description\*

The 1" assembly is comprised of 1" Novawall Weltless/Concealed Square Edge extrusions with 1" thick - 6 PCF fiberglass mounted to 5/8" sheet rock. The Novawall Novaspan16 system includes two layers of fabric. The face fabric is Novaspan16 that is 192" wide - 8.2 ounce per square yard - 100% polyester and Novaspan16 scrim layer that is 192" wide - 5.5 ounce per square yard - 100% polyester. The Novaspan16 fabric is tucked into the Novawall extrusions completely covering the acoustical fiberglass. There is no air gap in the mounting method required to enhance the acoustic performance of the Novaspan16 assembly. The Novaspan16 assembly was mounted to sheet rock as is standard mounting for all Novawall Novaspan installations. The Novaspan16 scrim layer is used to reduce the visual translucency of the face fabric and conceal subtle variations typical of the acoustical fiberglass substrate.

Description	Thickness	Density	Weight
<b>Novaspan16</b>	0.024 in	28.00 Lb/ft <sup>3</sup>	0.056 Lb/ft <sup>2</sup>
<b>Novaspan16 scrim layer</b>	0.020 in	22.80 Lb/ft <sup>3</sup>	0.038 Lb/ft <sup>2</sup>
<b>6 PCF Fiberglass</b>	0.960 in	6.26 Lb/ft <sup>3</sup>	0.501 Lb/ft <sup>2</sup>
<b>5/8" Sheet rock</b>	0.630 in	42.10 Lb/ft <sup>3</sup>	2.210 Lb/ft <sup>2</sup>

\* - Stated per Client/Manufacturer

## Specimen Description (Continued)

### Option B - 2" Stretch Fabric Wall System Description\*

The 2" assembly was comprised of 2" Novawall Weltless/Concealed Square Edge extrusions with 2" thick - 6 PCF fiberglass mounted to 5/8" sheet rock. The Novawall Novaspan16 system includes two layers of fabric. The face fabric is Novaspan16 that is 192" wide - 8.2 ounce per square yard - 100% polyester and Novaspan16 scrim layer that is 192" wide - 5.5 ounce per square yard - 100% polyester. The Novaspan16 fabric is tucked into the Novawall extrusions completely covering the acoustical fiberglass. There is no air gap in the mounting method required to enhance the acoustic performance of the Novaspan16 assembly. The Novaspan16 assembly was mounted to sheet rock as is standard mounting for all Novawall Novaspan installations. The Novaspan16 scrim layer is used to reduce the visual translucency of the face fabric and conceal subtle variations typical of the acoustical fiberglass substrate.

Description	Thickness	Density	Weight
<b>Novaspan16</b>	0.024 in	28.00 Lb/ft <sup>3</sup>	0.056 Lb/ft <sup>2</sup>
<b>Novaspan16 scrim layer</b>	0.020 in	22.80 Lb/ft <sup>3</sup>	0.038 Lb/ft <sup>2</sup>
<b>6 PCF Fiberglass</b>	1.970 in	6.41 Lb/ft <sup>3</sup>	0.533 Lb/ft <sup>2</sup>
<b>5/8" sheet rock</b>	0.630 in	42.10 Lb/ft <sup>3</sup>	2.210 Lb/ft <sup>2</sup>

\* - Stated per Client/Manufacturer

### Comments

Two, 1.22 m by 2.44 m, and one, 0.30 m by 2.44 m, panels were arranged to produce the 2.44 m by 2.74 m test specimen. The total weight of the Option A was 97.8 kg. The total weight of Option B was 130.63 kg. Photographs are included in Appendix C. The client did not supply a report drawing of the test specimen. Intertek-ATI will store samples of test specimens for four years.

Intertek-ATI 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 Intertek-ATI for the entire test record retention period. The test record retention period ends four years after the test date.

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 is intended to help in the client's quality assurance program, but it does not represent a continuous or exhaustive evaluation of the specimen tested or of other products or materials that were not evaluated. The statements and data provided herein do not constitute approval, disapproval, certification, or acceptance of performance or materials.

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For INTERTEK-ATI:

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Matthew D. Tressler  
Technician - Acoustical Testing

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Kurt A. Golden  
Project Lead— Acoustical Testing

MDT:jmc

Attachments (pages): This report is complete only when all attachments listed are included.

- Appendix A: Equipment description (1)
- Appendix B: Complete test results (4)
- Appendix C: Photographs (2)



### Revision Log

<u>Rev. #</u>	<u>Date</u>	<u>Page(s)</u>	<u>Revision(s)</u>
R0	09/27/16	N/A	Original Report Issue

## Appendix A

### Instrumentation:

Instrument	Manufacturer	Model	Description	ATI Number	Date of Calibration
Data Acquisition Unit	National Instruments	PXI-1033	Data Acquisition card	65126	05/16 *
Receive Room Microphone	PBC Piezotronics	378B20	Microphone and Preamplifier	64902	12/15
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64903	12/15
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	65103	12/15
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64905	12/15
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64906	12/15
Receive Room Environmental Indicator	Comet	T7510	Receive Room	64915	03/16
Microphone Calibrator	Norsonic	1251	Pistonphone Calibrator	65105	05/16

\*- 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> (8291.3 ft <sup>3</sup> )	Rotating vane and stationary diffusers Temperature and humidity controlled Isolation pads under the floor

N/A-Not Applicable



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## **Appendix B**

### **Complete Test Results**



## SOUND ABSORPTION

ASTM C 423

Test Date	09/20/16		
ATI No.	G2866.01A		
Client	Novawall Systems, Inc.		
Specimen	Novawall Novaspan16, 1" stretch fabric wall system		
Operator	Matthew D. Tressler		
Sample Area	6.69 m <sup>2</sup>		
Mounting Type	Type A		
	Empty	Full	
Temp C	19.9	20.9	
RH %	55	52	
B.P. (mb)	1011		

Freq (Hz)	Empty Room Absorption (m <sup>2</sup> )	Uncertainty	Full Room Absorption (m <sup>2</sup> )	Uncertainty	Absorption Coefficient	Relative Uncertainty
80	4.52	0.271	4.47	0.268	0.00	0.057
100	5.11	0.291	5.34	0.378	0.03	0.071
125	5.22	0.172	5.63	0.266	0.06	0.047
160	4.56	0.147	5.28	0.190	0.11	0.036
200	4.50	0.026	5.88	0.067	0.21	0.011
250	4.99	0.090	7.20	0.085	0.33	0.019
315	5.07	0.030	8.66	0.059	0.54	0.010
400	5.14	0.073	9.80	0.018	0.70	0.011
500	5.12	0.049	10.75	0.185	0.84	0.029
630	4.74	0.031	11.07	0.024	0.95	0.006
800	4.88	0.029	11.50	0.024	0.99	0.006
1000	4.87	0.015	11.62	0.008	1.01	0.003
1250	5.21	0.029	12.16	0.012	1.04	0.005
1600	5.26	0.010	12.28	0.018	1.05	0.003
2000	5.19	0.007	12.09	0.022	1.03	0.003
2500	5.44	0.006	12.66	0.110	1.08	0.017
3150	6.03	0.021	12.77	0.009	1.01	0.003
4000	6.42	0.008	13.01	0.004	0.99	0.001
5000	7.09	0.006	13.55	0.007	0.97	0.001

**NRC Rating**                      **0.80**                      *(Noise Reduction Coefficient)*  
**SAA Rating**                      **0.81**                      *(Sound Absorption Average)*

Notes:

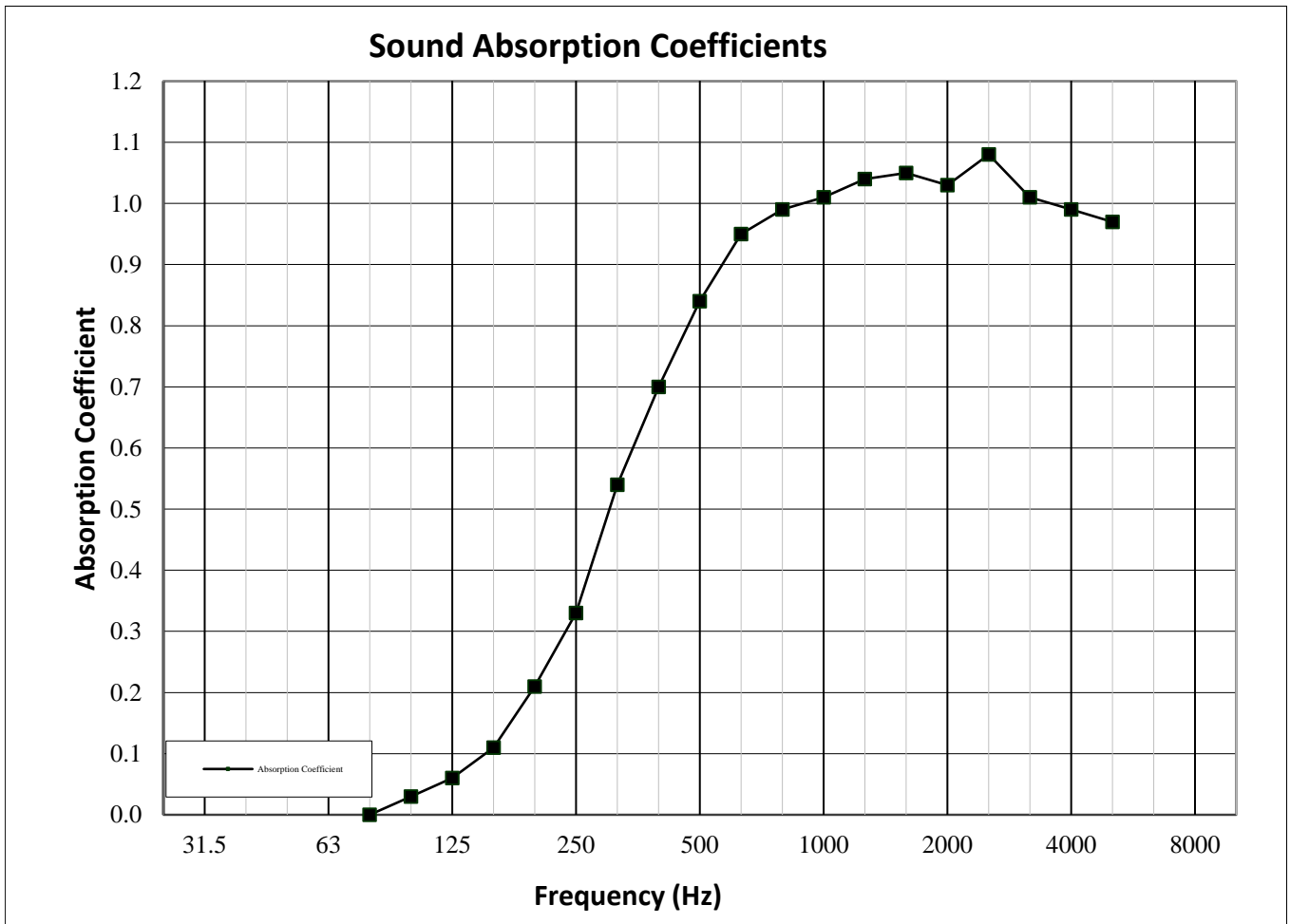
1) The NRC rating is the arithmetic average of the sound absorption coefficients at 250, 500, 1000, and 2000 hertz. The average is rounded to the nearest multiple of 0.05.

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

Test Date	09/20/16	
ATI No.	G2866.01A	
Client	Novawall Systems, Inc.	
Specimen	Novawall Novaspan16, 1" stretch fabric wall system	
Operator	Matthew D. Tressler	
Sample Area	6.69 m <sup>2</sup>	
Mounting Type	Type A	
	Empty	Full
Temp C	19.9	20.9
RH %	55	52
B.P. (mb)	1011	



# SOUND ABSORPTION

## ASTM C 423

Test Date	09/20/16	
ATI No.	G2866.01B	
Client	Novawall Systems, Inc.	
Specimen	Novawall Novaspan16, 2" stretch fabric wall system	
Operator	Matthew D. Tressler	
Sample Area	6.69 m <sup>2</sup>	
Mounting Type	Type A	
	Empty	Full
Temp C	19.9	20.7
RH %	55	55
B.P. (mb)	1010	

Freq (Hz)	Empty Room Absorption (m <sup>2</sup> )	Uncertainty	Full Room Absorption (m <sup>2</sup> )	Uncertainty	Absorption Coefficient	Relative Uncertainty
80	4.52	0.271	5.04	0.279	0.08	0.058
100	5.11	0.291	5.85	0.331	0.11	0.066
125	5.22	0.172	6.69	0.295	0.22	0.051
160	4.56	0.147	7.35	0.267	0.42	0.046
200	4.50	0.026	8.97	0.063	0.67	0.010
250	4.99	0.090	10.81	0.065	0.87	0.017
315	5.07	0.030	11.86	0.044	1.01	0.008
400	5.14	0.073	12.14	0.036	1.05	0.012
500	5.12	0.049	12.33	0.058	1.08	0.011
630	4.74	0.031	11.86	0.036	1.06	0.007
800	4.88	0.029	11.94	0.017	1.06	0.005
1000	4.87	0.015	11.75	0.026	1.03	0.005
1250	5.21	0.029	12.04	0.024	1.02	0.006
1600	5.26	0.010	12.08	0.018	1.02	0.003
2000	5.19	0.007	11.85	0.016	1.00	0.003
2500	5.44	0.006	12.42	0.117	1.04	0.018
3150	6.03	0.021	12.69	0.007	1.00	0.003
4000	6.42	0.008	13.08	0.011	1.00	0.002
5000	7.09	0.006	13.58	0.006	0.97	0.001

**NRC Rating**      **1.00**      *(Noise Reduction Coefficient)*  
**SAA Rating**      **0.99**      *(Sound Absorption Average)*

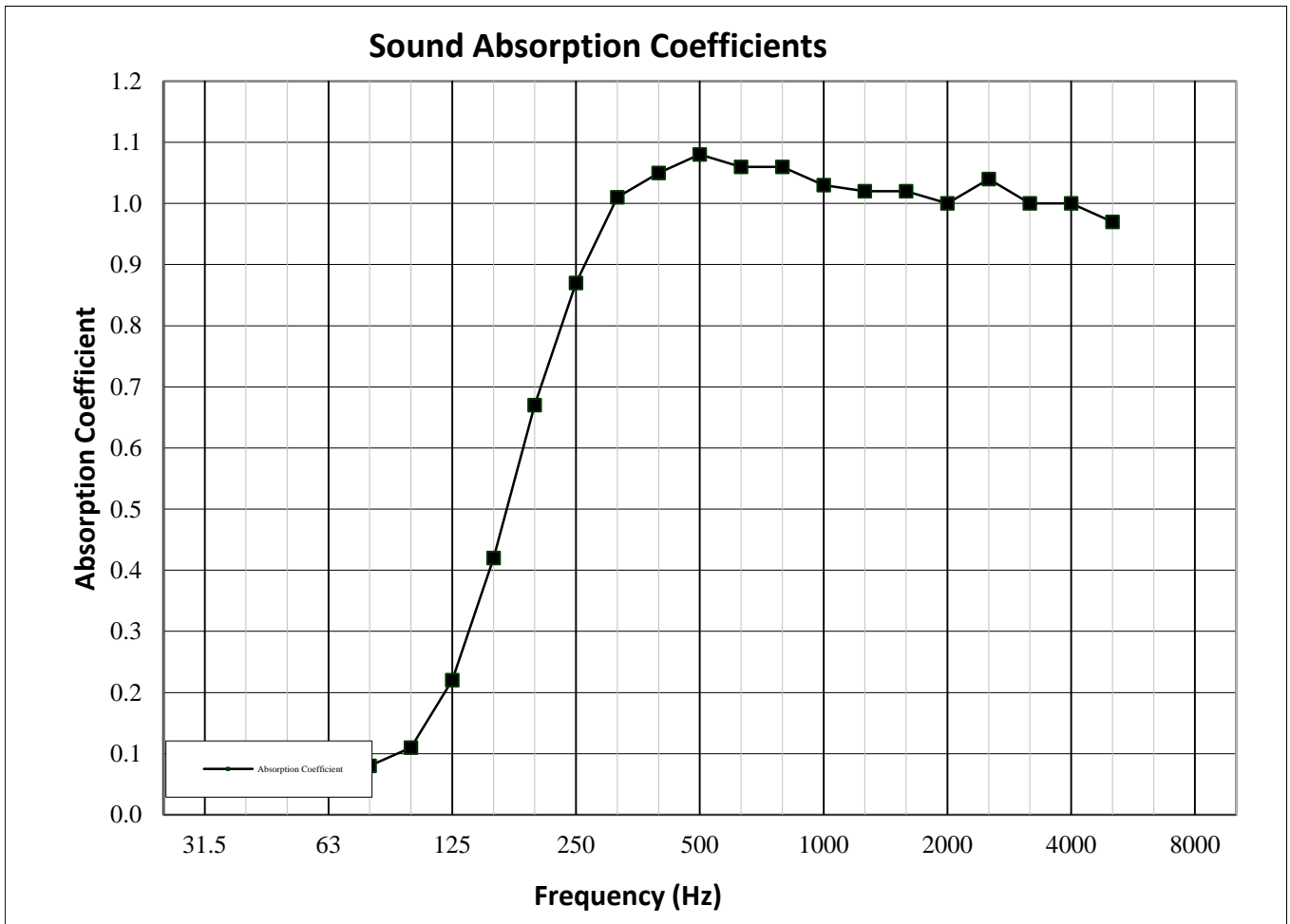
**Notes:**

- 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

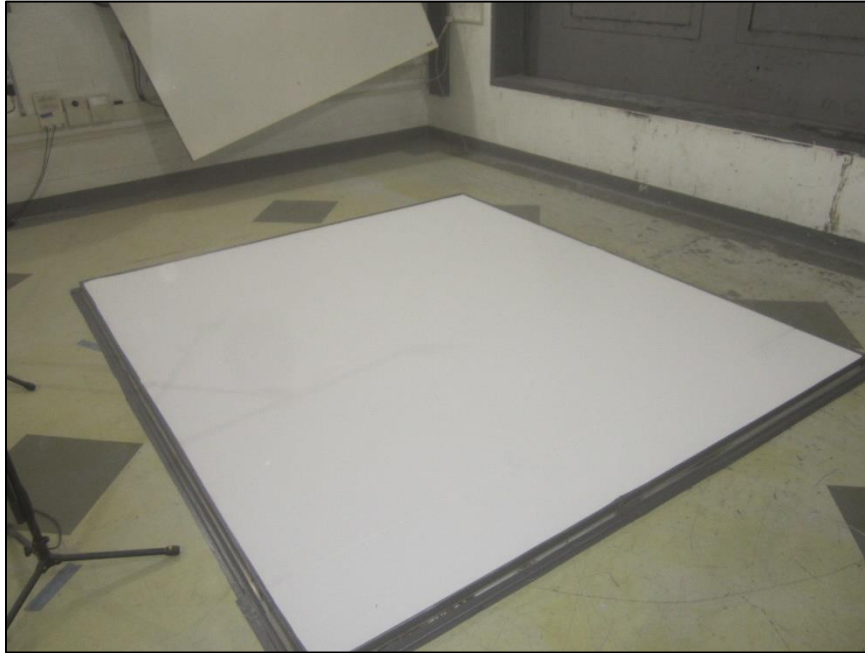
ASTM C 423

Test Date	09/20/16	
ATI No.	G2866.01B	
Client	Novawall Systems, Inc.	
Specimen	Novawall Novaspan16, 2" stretch fabric wall system	
Operator	Matthew D. Tressler	
Sample Area	6.69 m <sup>2</sup>	
Mounting Type	Type A	
	Empty	Full
Temp C	19.9	20.7
RH %	55	55
B.P. (mb)	1010	



## Appendix C

### Photographs



**View of Installed Specimen A**



**Side View of Installed Specimen A**



**Side View of Option A**



**Side View of Option B**