

**ACOUSTICAL TEST REPORT**

**Rendered to:**

**NOVAWALL SYSTEMS, INC.**

**SERIES/MODEL: Quiet Core  
TYPE: 1" Fiberglass Panels**

**Report No: 01-41818.01  
Test Date: 06/13/02  
Report Date: 07/02/02**



Architectural Testing

## ACOUSTICAL TEST REPORT

Rendered to:

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

**Report No:** 01-41818.01  
**Test Date:** 06/13/02  
**Report Date:** 07/02/02

### **Test Sample Identification:**

**Series/Model:** Quiet Core

**Type:** 1" Thick, 6 lb Density, Fiberglass Panel

**Project Summary:** Architectural Testing, Inc. (ATI) was contracted by Novawall Systems, Inc. to a conduct sound absorption test on the Quiet Core fiberglass panel. 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.

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

*ASTM C 423-98, Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.*

*ASTM E 795-93, 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 423-98. 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 sample 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 test specimen was duct taped to minimize edge effects. The test specimen was also sealed to the floor with 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.

**Sample Description:**

The test sample consisted of six panels. Each 36" x 48" (nominal) panel consisted of one sheet of 1/2" gypsum board with a plastic frame stapled to the top edge. Within the plastic frame was a 1" sheet of fiberglass covered by a woven cloth. Each panel weighed 29.0 lbs. The six panels were arranged to form a 8' x 9' test sample. The overall thickness of the panels was approximately 1-1/2". Any significant gaps between panels were duct taped. See appendix C for photographs.

**Comments:** The client did not supply drawings on the Series/Model Quiet Core Fiberglass Panel. The sample was disassembled, and the components will be retained by ATI for four years.

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

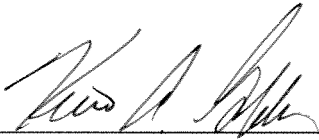
Sample ID Number & Sample Description	1/3 Octave Absorption Coefficients						NRC	SAA
	125	250	500	1000	2000	4000		
01-41818.01 Quiet Core 1" thick, 6 lb. density, fiberglass panel	0.10	0.29	0.78	0.99	1.07	1.04	0.80	0.75

The complete test results are listed in Appendix B.

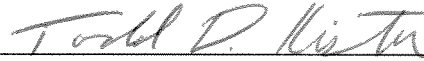
This report is prepared for the convenience of our customer and endeavors to provide accurate and timely project information. It contains a summary of observations made by a qualified representative of Architectural Testing, Inc. The results of this report apply only to the specimen that was tested. The statements made herein do not constitute approval, disapproval, certification or acceptance of performance or materials.

A copy of this report will be retained by ATI for a period of four years. This report is the exclusive property of the client so named herein. This report shall not be reproduced, except in full, without written approval by Architectural Testing, Inc.

For ARCHITECTURAL TESTING, INC:

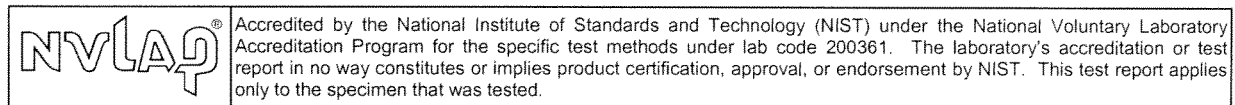


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KAG:kag/nlb  
01-41818.01



**DOCUMENT CONTROL ADDENDUM #01-41818.00**

**Current Issue Date: 07/02/02**

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**Report No.: 01-41818.01**

**Requested by:** Pamela Marchesano, Novawall Systems, Inc.

**Purpose:** Sound absorption test report on a Series/Model Quiet Core 1" thick, 6 lb density fiberglass panel.

**Issued Date:** 07/02/02

**Comments:**

## Appendix A

### Instrumentation:

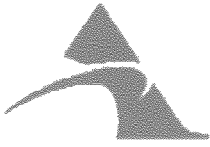
1. Analyzer: Hewlett Packard Model 35670A, Dynamic Signal Analyzer.
2. Receive room microphone: Hewlett Packard (ACO), model ACOJ 7047 1/2" pressure type, condenser microphone.
3. Microphone calibrator: Bruel & Kjaer, Type 4228 Pistonphone Calibrator, 124 dB at 250 hertz.
4. Noise source: Two, non-coherelated "Pink" noise signals generated by a Delta Electronics, Type SNG-1 Stereo Noise Generator.
5. Spectrum shaper: Rane Type RPE228 Programmable EQ.
6. Power amplifiers Two Renkus-Heinz Model P2000 Amplifiers.
7. Receive room loudspeakers: Two Renkus-Heinz "Trap Jr/9" loudspeakers.

### Test Chamber Descriptions:

1. Receive Room: Volume =  $8,291.3 \text{ ft}^3$  ( $234 \text{ m}^3$ ).  
Rotating vane and stationary diffusers.  
Temperature & humidity controlled.  
Isolation pads under the floor.

## **Appendix B**

### **Complete Sound Absorption Test Results**



**SOUND ABSORPTION**  
**ASTM C423**

**Architectural Testing**

<b>ATI No.</b>	01-41818.01					
<b>Client</b>	Novawall Systems, Inc.					
<b>Specimen</b>	Novawall Series/Model Quiet Core with 1" Thick, 6 lb. density, fiberglass panel					
<b>Specimen Area</b>	72.00 Sq Ft	<b>Mounting Type A</b>				
<b>Operator</b>	Kurt A. Golden					
	<b>Empty Room</b>			<b>Full Room</b>		
<b>Date</b>	13-Jun-02			13-Jun-02		
<b>Temp F</b>	80.5			80.1		
<b>RH %</b>	58.6			59.7		
<b>Freq</b> (Hz)	<b>Absorption</b> (Sabines)	<b>Uncert</b>	<b>Absorption</b> (Sabines)	<b>Uncert</b>	<b>Sabins/SqFt</b>	<b>Uncertainty</b>
50	38.34	0.024	37.56	0.135	0.00	0.002
63	40.80	0.142	42.22	0.219	0.02	0.004
80	52.82	0.341	52.51	0.079	0.00	0.005
100	48.27	0.230	55.84	0.274	0.11	0.005
125	44.38	0.170	51.24	0.030	0.10	0.002
160	43.17	0.243	53.39	0.040	0.14	0.003
200	42.94	0.123	57.41	0.323	0.20	0.005
250	42.39	0.154	62.93	0.240	0.29	0.004
315	42.80	0.007	71.15	0.075	0.39	0.001
400	47.21	0.124	86.76	0.370	0.55	0.005
500	45.75	0.098	102.21	0.441	0.78	0.006
630	48.45	0.170	111.46	0.019	0.88	0.002
800	52.08	0.107	121.12	0.321	0.96	0.005
1000	55.98	0.057	127.52	0.145	0.99	0.002
1250	63.95	0.091	135.86	0.161	1.00	0.003
1600	68.49	0.185	143.24	0.142	1.04	0.003
2000	72.59	0.165	149.32	0.195	1.07	0.004
2500	84.57	0.004	159.82	0.268	1.05	0.004
3150	102.77	0.102	178.72	0.022	1.05	0.001
4000	126.61	0.072	201.80	0.287	1.04	0.004
5000	165.26	0.013	239.09	0.183	1.03	0.003
6300	215.66	0.196	291.98	0.005	1.06	0.003
8000	290.49	0.211	365.94	0.984	1.05	0.014
10000						
<b>Exact NRC Rating</b>	0.782					
<b>Exact SAA Rating</b>	0.766					
<b>NRC Rating</b>	0.80					
<b>SAA Rating</b>	0.75					

	Accredited by the National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program. The laboratory's accreditation or test report in no way constitutes or implies product certification, approval, or endorsement by NIST. This test report applies only to the specimen that was tested.