

Sound Absorption Test  
Intertek

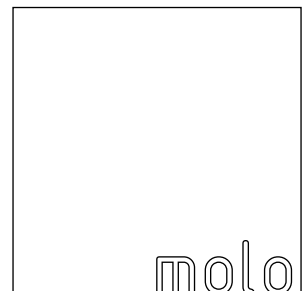
textile  
softwall + softblock  
modular system

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## **textile softwall + softblock modular system Sound Absorption Test**

The attached report gives the results of Sound Absorption Test and the determination of the Noise Reduction Coefficient on the molo's textile softwall + softblock modular system.

The Noise Reduction Coefficient (NRC) represents the percentage of sound-waves, encompassing the typical frequencies of human speech, that are absorbed by the softwall and NOT reflected back into the room or space.

Products with high NRC ratings improve the acoustics in a room, increase speech clarity and reduce room sound reflections. The softwall's unique honeycomb structure creates numerous "pleats", increasing the wall's surface area and improving its sound absorption qualities. The pleated surface of the softwall (and its general flexible form) breaks up a typical room's parallel walls and flat surfaces, reducing reflection and standing waves. Furthermore the honeycomb cells function as columns of air stacked against one another absorbing sound waves at each pass contributing to a higher NRC rating.



# REPORT

3933 US ROUTE 11    CORTLAND, NEW YORK 13045

Order No. 3190142

Date: September 28, 2009

**REPORT NO. 3190142CRT-001**

## **SOUND ABSORPTION TESTS ON TEXTILE SOFTWALL + SOFTBLOCK MODULAR SYSTEM**

**RENDERED TO**

**MOLO DESIGN, LTD.  
1470 VENABLES STREET  
VANCOUVER, V5L 2G7, CANADA**

### **INTRODUCTION**

This report gives the results of Sound Absorption tests and the determination of the Noise Reduction Coefficient on the molo design textile softwall + softblock modular system. The test specimen was selected and supplied by the client and received at the laboratories on September 21, 2009. The sample appeared to be in a new, unused condition.

### **AUTHORIZATION**

Signed Intertek Quotation No. 500177089.

### **TEST METHOD**

The specimen was tested in accordance with the American Society for Testing and Materials designation ASTM C423-08, "Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method".

### **GENERAL**

This test method describes the measurement of sound absorption by analyzing the decay rate of sound in a reverberation room. The difference of the decay with and without the specimen in the room is utilized to determine the sound absorption of the specimen under test. Intertek Testing Services Acoustical Facilities utilizes a 16,640 cu. ft. (470 cubic meter) reverberation room.

## **GENERAL** - Cont'd

The sound absorption coefficient is ideally defined as the fraction of the randomly incident sound power absorbed by the material. The greater the coefficient, the greater the sound absorption.

The Noise Reduction Coefficient (NRC) is a single number rating obtained by taking the arithmetic average of the absorption coefficients at 250, 500, 1000, and 2000 Hz rounded to the nearest multiple of 0.05.

The Sound Absorption Average (SAA) is a single number rating obtained by taking the arithmetic average of the one-third octave bands from 200 through 2500 Hz rounded to the nearest 0.01.

## **DESCRIPTION OF TEST SPECIMEN**

The test specimen consisted of a section of the molo design textile softwall + softblock modular system. The wall was stretched out to a distance of 12.5 feet and measured 17 inches thick. The area used for testing measured 200 square feet. The wall was tested in the straight position and in a "S" shaped position.



**RESULTS OF TEST**

**TEXTILE SOFTWALL +SOFTBLOCK MODULAR SYSTEM – WALL STRAIGHT**

<u>One Third Octave Band Center Frequency, Hz</u>	<u>Absorption Coefficients Sabins/ft<sup>2</sup></u>	<u>Percent Uncertainty</u>
100	0.39	4.32
125	0.19	4.10
160	0.25	3.99
200	0.26	2.71
250	0.18	2.59
315	0.23	1.92
400	0.25	2.33
500	0.30	1.35
630	0.45	1.29
800	0.85	1.70
1000	0.66	1.09
1250	0.59	1.22
1600	0.65	1.04
2000	0.89	1.04
2500	0.94	1.02
3150	0.83	0.68
4000	0.65	0.72
5000	0.61	0.69
<u>Sound Absorption Average (SAA)</u>	0.52	

<u>IDENTIFICATION</u>	<u>Absorption Coefficients – Sabins/ft.<sup>2</sup></u>						
	<u>One-Third Octave Band Center Frequency, Hz</u>						
	<u>125</u>	<u>250</u>	<u>500</u>	<u>1000</u>	<u>2000</u>	<u>4000</u>	<u>NRC</u>
	0.19	0.18	0.30	0.66	0.89	0.65	0.50
Precision ±	0.05	0.02	0.02	0.01	0.01	0.02	

**MOUNTING:** Type “K” per ASTM Designation E795-05, “Standard Practices for Mounting Test Specimens During Sound Absorption Tests”.

**RESULTS OF TEST**

**TEXTILE SOFTWALL +SOFTBLOCK SYSTEM – WALL WITH “S” CURVE**

<u>One Third Octave Band Center Frequency, Hz</u>	<u>Absorption Coefficients Sabins/ft<sup>2</sup></u>	<u>Percent Uncertainty</u>
100	0.25	6.07
125	0.24	2.72
160	0.21	4.98
200	0.18	3.09
250	0.16	2.03
315	0.22	2.41
400	0.24	1.47
500	0.34	1.67
630	0.49	1.79
800	0.85	1.33
1000	0.69	1.62
1250	0.62	1.21
1600	0.66	0.86
2000	0.87	0.75
2500	0.93	0.87
3150	0.84	0.52
4000	0.65	0.55
5000	0.61	0.81
<u>Sound Absorption Average (SAA)</u>	0.52	

<u>IDENTIFICATION</u>	<u>Absorption Coefficients – Sabins/ft.<sup>2</sup></u>						<u>NRC</u>
	<u>One-Third Octave Band Center Frequency, Hz</u>						
	<u>125</u>	<u>250</u>	<u>500</u>	<u>1000</u>	<u>2000</u>	<u>4000</u>	
	0.25	0.16	0.34	0.69	0.87	0.65	0.50
Precision ±	0.05	0.02	0.02	0.01	0.01	0.02	

**MOUNTING:** Type “K” per ASTM Designation E795-05, “Standard Practices for Mounting Test Specimens During Sound Absorption Tests”.



## REMARKS

1. Aging Period: None
2. Ambient Temperature: 71°F
3. Relative Humidity: 68%

## CONCLUSION

The test method employed for this test has no pass-fail criteria, therefore, the evaluation of the test results is left to the discretion of the client.

This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

Date of Tests: September 28, 2009

Report Approved by:

Brian Cyr  
Engineer  
Acoustical Testing

Report Reviewed By:

James R. Kline  
Engineer/Quality Supervisor  
Acoustical Testing

Attachments: None