

# Architectural Surfaces, Inc.

**DISTINCTIVE WOOD & SPECIALTY ACOUSTICAL CEILING & WALL SYSTEMS**

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**Materials Technology**

**Stork Twin City Testing Corporation**

**PROJECT NUMBER:** 30160-08-92064-6  
**PAGE:** 1 of 5  
**DATE:** January 29, 2008

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Investigative Chemistry Geotechnical Construction Materials  
Non Destructive Testing Failure Analysis Product Evaluation  
Metallogurgical Analysis Materials Testing Welder Qualification

**SOUND ABSORPTION TESTING CONDUCTED ON THE  
NEW WORLD™ PERFORATED PANELS  
WITH ECHO ELIMINATOR BACKER PANELS**

**Prepared for:**  
**Acoustical Surfaces, Inc**  
**Attn: Mr. Mike Mohs**  
**123 Columbia Court North, Suite 201**  
**Chaska, MN 55318**

**Client Purchase Order Number: Contract**

**Prepared By:**

**Mathew N. Botz**  
**Project Manager**  
**Product Testing Department**  
**(651) 659-7353**

**Reviewed By:**

**Kyle T. Hall**  
**Sr. Engineering Technician**  
**Product Testing Department**

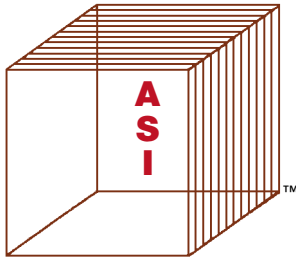
**The test results contained in this report pertain only to the samples submitted for testing and not necessarily to all similar products.**



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**PROJECT NUMBER:** 30160-07-82419-6

**PAGE:** 2 of 5

**DATE:** January 29, 2007

**Noise Reduction Coefficient (ASTM C423-07)**

**INTRODUCTION:**

This report presents the results of the sound absorption testing conducted on the New World™ Perforated Panels with Echo Eliminator backer panels. The test sample was submitted by Mr. Mike Mohs of Acoustical Surfaces, Inc (ASI). This work was completed on January 22, 2008.

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Stork Twin City Testing Corporation has been accredited by the U.S. Department of Commerce and the National Institute of Standards and Technology (NIST, formerly NBS) under their National Voluntary Laboratory Accreditation Program (NVLAP) for conducting ASTM C423 test procedures. This report may not be used to claim product endorsement by NVLAP, NIST or any agency of the U.S. Government.

**TEST RESULTS SUMMARY:**

<i>TYPE E400 NRC TEST</i>			Test Results		
Test #	SAMPLE DESCRIPTION	ADDITIONAL INFORMATION	NRC	SAA	--
7	New World™ Wood Perforated Panels	with 1" Echo Eliminator Panels	<b>0.50</b>	<b>0.47</b>	--
8	New World™ Wood Perforated Panels	with 2" Echo Eliminator Panels	<b>0.60</b>	<b>0.57</b>	--

See 'TEST DATA' section for detailed results.

**SPECIMEN DESCRIPTION:** (Also see "Test Results")

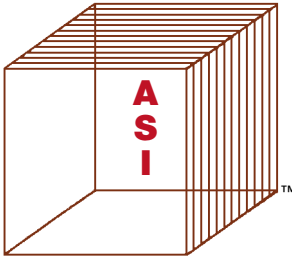
The test specimens were identified by ASI as the New World™ Wood Perforated Panels tested with Echo Eliminator backer panels. The New World™ panels had dimensions of 24" x 24" x 3/4" and weighed 4.8-lbs (1.2-psf). The panels contained 1/4" penetrations at 1" on-center in a staggered formation. The panels sat into a standard 2x2 T-bar gridwork. The samples were tested with Echo Eliminator backer panels (1" or 2" thick). The backer panels were positioned behind the New World™ panels.

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**PAGE:** 3 of 5

**DATE:** January 29, 2007

## TEST PROCEDURE

### Sound Absorption Test

ASTM C 423-07, "Sound Absorption and Sound Absorption Coefficient by the Reverberation Room Method", was followed in every respect. The test sample was tested in a Type E400 Mounting style. The material was tested on 2x2 gridwork to simulate a ceiling tile installation. The overall sample had a dimension of 8' x 9' (72-ft<sup>2</sup>).

NRC was calculated by rounding the sound absorption coefficients for 250, 500, 1000 and 2000 Hz to the nearest 0.05. SAA was calculated by rounding the sound absorption coefficients for the twelve frequencies from 200 Hz to 2500 Hz to the nearest 0.01.

## TEST EQUIPMENT:

<u>Manufacturer</u>	<u>Model</u>	<u>Description</u>	<u>S/N</u>
Norwegian Electronics	NE830	Real Time Analyzer	11511
Brüel & Kjær	3923	Rotating Microphone Boom	815424
Norsonic (Source Rm)	1230	Pressure Condenser Microphone	26361
Brüel & Kjær (Term Rm)	4192	Pressure Condenser Microphone	2360314

## REMARKS:

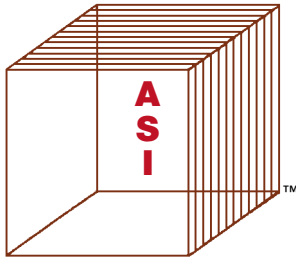
The test sample will be retained for a period of **15-days** and then discarded unless notified by the client.

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**TEST RESULTS:**

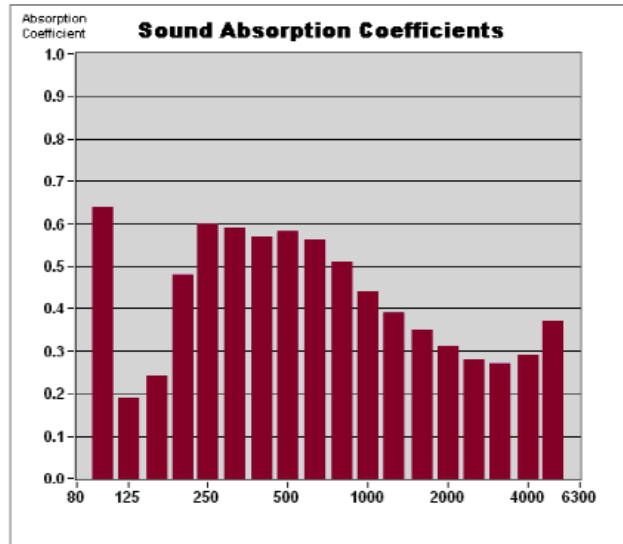
Filename:  **ASTM C423 - Sound Absorption**

Client	Product	Model #	Quantity	Comment
Acoustical	NEW World Wood		1	w/1" Echo Eliminator

Sample Size - Wt.  Sample Description: Acoustical Surfaces: NEW World Wood Perforated Panels w/ 1" Echo Eliminator: 8' x 9' Sample

Time Stamp:  Total Sample Area:

F (Hz)	Absorption Coefficient	Absorption (Sabins)*
100	0.64	46.16
125	0.19	13.85
160	0.24	17.39
200	0.48	34.65
250	0.60	43.04
315	0.59	42.37
400	0.57	40.91
500	0.58	41.95
630	0.56	39.97
800	0.51	36.60
1000	0.44	31.92
1250	0.39	27.79
1600	0.35	25.17
2000	0.31	22.67
2500	0.28	20.15
3150	0.27	19.79
4000	0.29	20.57
5000	0.37	26.62



Temp (°C)  R.H. (%)  ATM (mbar)

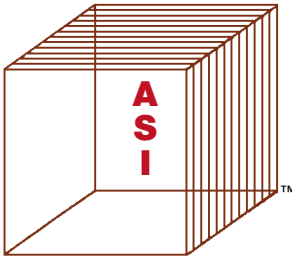
**SAA = 0.47    NRC = 0.50**

\* total absorption based on 72.0 ft²

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**TEST RESULTS:**

Filename:  **ASTM C423 - Sound Absorption**

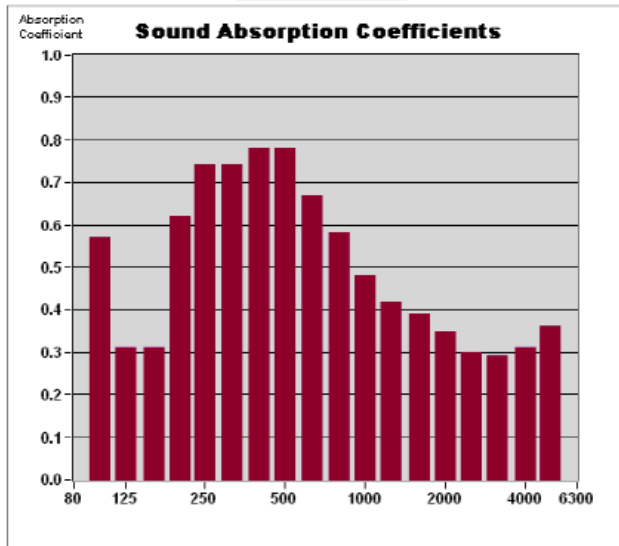
Client:  Product:  Model #:  Quantity:  Comment:

Sample Size - Wt.:  Sample Description:

Time Stamp:

Total Sample Area:

F (Hz)	Absorption Coefficient	Absorption (Sabins)*
100	0.57	41.13
125	0.31	22.10
160	0.31	22.23
200	0.62	44.42
250	0.74	53.42
315	0.74	53.20
400	0.78	55.84
500	0.78	55.99
630	0.67	47.97
800	0.58	41.48
1000	0.48	34.32
1250	0.42	30.20
1600	0.39	28.14
2000	0.35	25.23
2500	0.30	21.75
3150	0.29	21.21
4000	0.31	22.38
5000	0.36	25.80



Temp (°C)  R.H. (%)  ATM (mbar)

\* total absorption based on 72.0 ff²

**SAA = 0.57    NRC = 0.60**

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