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## Materials Technology

## Stork Twin City Testing Corporation

**PROJECT NUMBER:** 30160-08-92064-1  
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**DATE:** January 29, 2008

662 Cromwell Avenue Telephone : (651) 645-3601  
Saint Paul, MN 55114 Toll Free : (888) 645-TEST  
USA Telefax : (651) 659-7348  
Website : www.storksmL.com

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

### SOUND ABSORPTION TESTING CONDUCTED ON THE 1/2" QUIET DUCT LINER

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

**INTRODUCTION:**

This report presents the results of the sound absorption testing conducted on 1/2" Quiet Duct Liner material. The test sample was submitted by Mr. Mike Mohs of Acoustical Surfaces, Inc (ASI). This work was completed on January 21, 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:**

TYPE A NRC TEST			Test Results		
Test #	SAMPLE DESCRIPTION	ADDITIONAL INFORMATION	NRC	SAA	--
1	1/2" Quiet Duct Liner	Blue/Black Colored Fabric	0.40	0.40	--

See 'TEST DATA' section for detailed results.

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

The test specimens was identified by ASI as 1/2" Quiet Duct Liner. The material was received in roll form. A test area of 72-ft<sup>2</sup> was collected from the roll, and weighed 7-lbs (0.1-psf).

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**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 A Mounting style. The material was tested on the test chamber surface with an overall sample 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  
test #1

**ASTM C423 - Sound Absorption**

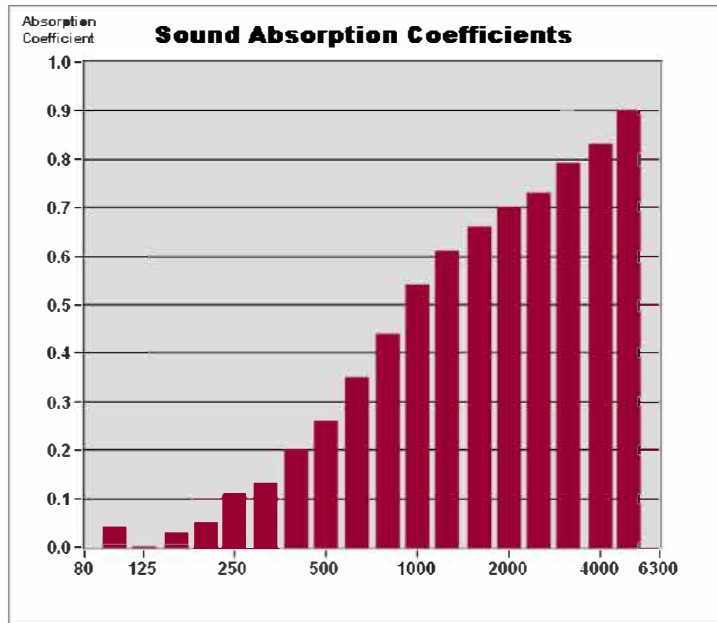
Client: Acoustical    Product: 1/2" Quiet Duct Liner    Model #:    Quantity: 1    Comment: Type A Mounting

Sample Size - Wt.: 108.0 in x 96.0 in x 1/2" - 7 lbs    Sample Description: Acoustical Surfaces: 8" x 9" x 1/2" Pure Blue Wool Face & Black Fabric Backing:    1/2" Quiet Duct Liner :

Time Stamp  
Mon, Jan 21, 2008 - 1:38 PM

Total Sample Area: 72.0 ft<sup>2</sup>

F (Hz)	Absorption Coefficient	Absorption (Sabins)*
100	0.04	2.94
125	0.00	0.19
160	0.03	2.28
200	0.05	3.61
250	0.11	7.85
315	0.13	9.58
400	0.20	14.25
500	0.26	19.05
630	0.35	24.90
800	0.44	31.60
1000	0.54	38.83
1250	0.61	43.58
1600	0.66	47.63
2000	0.70	50.36
2500	0.73	52.57
3150	0.79	56.84
4000	0.83	60.11
5000	0.90	64.69



Temp (°C): 20.9    R.H. (%): 56    ATM (mbar): 998

\* total absorption based on 72.0 ft<sup>2</sup>

**SAA = 0.40    NRC = 0.40**

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