



Acoustical Surfaces, Inc.

SOUNDPROOFING, ACOUSTICS, NOISE & VIBRATION CONTROL SPECIALISTS

123 Columbia Court North • Suite 201 • Chaska, MN 55318
(952) 448-5300 • Fax (952) 448-2613 • (800) 448-0121

Email: sales@acousticalsurfaces.com
Visit our Website: www.acousticalsurfaces.com

We Identify and **S.T.O.P.** Your Noise Problems



PROJECT NUMBER: 3013 71-5070-1

PAGE: 1 of 3
DATE: Sept. 3, 1997

MAXIM TECHNOLOGIES INC.
662 Cromwell Avenue
St. Paul, Minnesota 55114

NOISE REDUCTION COEFFICIENT (NRC) TEST PERFORMED
ON R-200 U-CHARCOAL-MINI-SONEX
ACOUSTICAL FOAM PANELS


Rendered by Manufacturer and Released to:
ACOUSTICAL SURFACES INC.
123 Columbus Court North, Suite 201
Chaska, MN 55318

Client Purchase Order Number: 13458

Prepared by:

Reviewed By:

Ronald G. Smith
Engineering Technician
Mechanical/Metallurgical Department


Richard O. Thomalla
Acoustical/Fenestration Supervisor
Mechanical/Metallurgical Department
(612) 659-7310

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

662 Cromwell Avenue • St. Paul, MN 55114-1776 • 651-645-3601 • Fax: 651-659-7348

Austin Research Engineers • Chen-Northern • Empire Soils Investigations
Kansas City Testing • Southwestern Laboratories • Twin City Testing



- Soundproofing Products • Sonex™ Ceiling & Wall Panels • Sound Control Curtains • Equipment Enclosures • Acoustical Baffles & Banners • Solid Wood & Veneer Acoustical Ceiling & Wall Systems
- Professional Audio Acoustics • Vibration & Damping Control • Fire Retardant Acoustics • Hearing Protection • Moisture & Impact Resistant Products • Floor Impact Noise Reduction
- Sound Absorbers • Noise Barriers • Fabric Wrapped Wall Panels • Acoustical Foam (Egg Crate) • Acoustical Sealants & Adhesives • Outdoor Noise Control • Assistive Listening Devices
- OSHA, FDA, ADA Compliance • On-Site Acoustical Analysis • Acoustical Design & Consulting • Large Inventory • Fast Shipment • No Project too Large or Small • Major Credit Cards Accepted



Acoustical Surfaces, Inc.

SOUNDPROOFING, ACOUSTICS, NOISE & VIBRATION CONTROL SPECIALISTS

123 Columbia Court North • Suite 201 • Chaska, MN 55318
(952) 448-5300 • Fax (952) 448-2613 • (800) 448-0121

Email: sales@acousticalsurfaces.com
Visit our Website: www.acousticalsurfaces.com

We Identify and **S.T.O.P.** Your Noise Problems

PROJECT NUMBER: 3013 71-5070.1

PAGE: 2 of 3
DATE: Sept. 3, 1997

NOISE REDUCTION COEFFICIENT TEST - ASTM C423-90a

INTRODUCTION:

This report presents the results of Noise Reduction Coefficient (NRC) test conducted on Model R-200 U-charcoal-Mini-Sonex Acoustical Foam Panels manufactured and submitted by Manufacturer on September 2, 1997 and was conducted on September 2, 1997 and released to Acoustical Surfaces Inc.

This report must not be reproduced except in its entirety with the approval Maxim Technologies Inc. The data in this report relates only to the item tested.

Maxim Technologies/Twin city Testing 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 this test procedure. This report may not be used to claim product endorsement by NVLAP or any agency of the U.S. Government.

SUMMARY OF RESULTS:

The NRC of the specimen described below is 0.65. (See individual frequency values below under TEST RESULTS.

SPECIMEN IDENTIFICATION:

Manufacturer : Rendered by Manufacturer and released to Acoustical Surfaces Inc.

Model# : R-200 U-Charcoal-Mini-Sonex

Dimensions (W x H x D) : 24" x 48" x 1" per specimen

Weight : 1.2 lbs. (0.15 PSF) per specimen

Surface Area : 8 ft²

Total Surface Area Tested : 48 ft² - consisting of 6 specimens.

Mounting Type : Type E mounting. 16" air space

Specimen Description : Acoustical foam panels convoluted on one side. The convoluted side has black, hypolen coating and was tested with the convolutions exposed to the sound.



Acoustical Surfaces, Inc.

SOUNDPROOFING, ACOUSTICS, NOISE & VIBRATION CONTROL SPECIALISTS

123 Columbia Court North • Suite 201 • Chaska, MN 55318
 (952) 448-5300 • Fax (952) 448-2613 • (800) 448-0121

Email: sales@acousticalsurfaces.com
 Visit our Website: www.acousticalsurfaces.com

We Identify and **S.T.O.P.** Your Noise Problems

PROJECT NUMBER: 3013 71-5070.1

PAGE: 2 of 3
 DATE: Sept. 3, 1997

TEST METHOD:

ASTM: C423-90A, "Sound Absorption and Sound Absorption Coefficients by one Reverberations Room method" was followed in every respect.

Absorption coefficients are the fraction of diffuse incident sound absorbed by the specimen and are expressed in sabins per square foot. The NRC is the average of the absorption coefficients for 250, 300, 1000, and 2000 hertz and is reported to the nearest integral of 0.05.

The temperature and relative humidity of the chamber during the tests were 72°F and 56%, respectively.

TEST EQUIPMENT:

<u>Manufacturer</u>	<u>Model</u>	<u>Serial #</u>	<u>Description</u>
Norwegian Electronics	NE830	11511	Real Time Spectrum Analyzer
Brüel & Kjær	3923	815424	Rotating Microphone Boom
Larson-Davis	2560	1032	Pressure Condenser

TEST EQUIPMENT:

Acoustical Foam Panels

Freq. (Hz)	Sabins/ Coefficient	Uncertainty, %
125	0.87	4.8
250	0.56	2.8
500	0.52	1.6
1000	0.71	1.1
2000	0.79	0.8
4000	0.76	0.8

Noise Reduction Coefficient (NRC) = 0.65

- Freq. = Octave band center frequency
- Abs Coefficient = Sound absorption coefficient (extended plane applications)
- Sabins per Unit Tested = Reported for samples used as unit absorbers/diffusers
- Uncertainty = % uncertainty of the absorption coefficient for 95% confidence

Information and statements in this report are derived from material, information and/or specifications furnished by the client and exclude any expressed or implied warranties as to the fitness of the material tested or analyzed for any particular purpose or use. This report is the confidential property of our client and may not be used for advertising purposes. This report shall not be reproduced except in full, without written approval of this laboratory. The recording of false, fictitious or fraudulent statements or entries on this document