Acoustical Surfaces, Inc.
We identify and S.T.O.P. Your Noise Problems
Sound Transmission Obscuring Products
Soundproofing, Acoustics, Noise & Vibration Control Specialists ™

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ARCHITECTURAL TESTING INC.

130 Derry Court • York, PA 17402-9405
Web: www.testati.com • Facsimile 717-764-2129 • Telephone 717-764-7700

ACOUSTICAL TEST REPORT

Rendered by Manufacturer for...

Acoustical Surfaces Inc.
123 Columbia Court North
Suite 201, Chaska, MN 55318

Report No:	01-34114.02
Test Date:	02/11/99
Report Date:	04/08/99
Expiration Date:	02/11/99

Test Sample Identification:

Series/Model: ARPRO PEPP

Type: ARPRO Porous Expanded Polypropylene PEPP

Project Summary: Architectural Testing, Inc. (ATI) was contacted for Acoustical Surfaces Inc. to conduct sound absorption tests on the ARPRO Porous Expanded Polypropylene PEPP product. 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. The test specimen was then placed in the reverberation room and and the absorption test was 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.

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Sample Descriptions: The requester supplied four ARPRO PEPP products, of varying thickness. Six 36" x 48" panels were received for each thickness of ARPRO PEPP product. The panel thickness, weights and calculated densities of the test specimens are listed below:

Actual Thickness (inches)	Single Panel Weight (lbs.)	Calculated Density (pcf)
2.00	5.4	2.7
1.75	4.9	2.8
1.00	2.6	2.6
0.75	2.2	2.9

All four thicknesses of the ARPRO PEPP product were tested on the ASTM E 795 Type A and E400 mountings. Only the 1-3/4" and 2" products were tested on the ASTM E 795 Type K mount.

For the ASTM E 795 Type A mount, all six panels (72 sq.ft.) were placed directly against the test surface (floor) of the reverberation room. The edges of the test specimens were sealed with duct tape to minimize diffraction effects.

For the ASTM E 795 E400 mount, all six panels (72 sq.ft.) were positioned inside the E400 test apparatus and the exposed face of the material was adjusted to an elevation of 400 mm above the test surface. The E400 test apparatus sealed the edges of the test specimens.

For the ASTM E 795 Type K mount, two panels were placed inside a 2" x 4" wood frame to simulate an office screen construction. The 51" wide by 75" high office screen was placed vertically on the floor of the reverberation room so that both sides of the screen were exposed to the sound field.

One 12" x 12" sample was taken from each of the four ARPRO PEPP products. The four samples 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	Mounting Method	1/3 Octave Absorption Coefficients						NRC	SAA
			125	250	500	1000	2000	4000		
34114.01-1	3/4" ARPRO	Type A	0.00	0.02	0.09	0.27	0.94	0.48	0.35	0.30
34114.01-2	1" ARPRO	Type A	0.02	0.04	0.14	0.53	0.61	0.57	0.35	0.35
34114.01-3	1-3/4" ARPRO	Type A	0.06	0.14	0.52	0.75	0.49	0.67	0.45	0.50
34114.01-4	2" ARPRO	Type A	0.05	0.13	0.70	0.63	0.51	0.63	0.50	0.50
34114.01-5	1-3/4" ARPRO	Type K	0.15	0.24	0.25	0.39	0.46	0.60	0.35	0.35
34114.01-6	2" ARPRO	Type K	0.14	0.25	0.30	0.47	0.44	0.59	0.35	0.35
34114.01-7	2" ARPRO	E400	0.50	0.48	0.33	0.56	0.58	1.00	0.50	0.50
34114.01-8	3/4" ARPRO	E400	0.63	0.57	0.36	0.36	0.41	0.70	0.40	0.45
34114.01-9	1" ARPRO	E400	0.63	0.55	0.33	0.34	0.54	0.53	0.45	0.45
34114.01-10	1-3/4" ARPRO	E400	0.59	0.48	0.36	0.49	0.53	0.62	0.45	0.45

The complete test results are listed in Appendix B.

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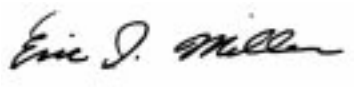
This report is prepared for the convenience of our customer and endeavors to provide accurate and timely project information. It contains a summary of observations made by a qualified representative of Architectural Testing, Inc. The results of this report apply only to the specimens that were tested. 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:

Todd D. Kister
Technician



Eric J. Miller
Sr. Project Engineer

TDK:tdk
01-34114.02

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Appendix A

Instrumentation:

1. Analyzer:	Hewlett Packard Model 35670A, Dynamic Signal Analyzer.
2. Receive room microphone:	Hewlett Packard (ACO), model ACOJ7047 1/2" pressure type, condenser microphone.
3. Source room microphone:	Hewlett Packard (ACO), model ACOJ 7047 1/2" pressure type, condenser microphone.
4. Microphone calibrator:	Bruel & Kjaer, Type 4228 Pistonphone Calibrator, 124 dB at 250 hertz.
5. Noise source:	Two, non-coherelated “Pink” noise signals generated by a Delta Electronics, Type SNG-1 Stereo Noise Generator.
6. Spectrum shaper:	Rane Type RPE228 Programmable EQ.
7. Power amplifiers	Two Renkus-Heinz Model P2000 Amplifiers.
8. Receive room loudspeakers:	Two Renkus-Heinz “Trap Jr/9” loudspeakers.
9. Source room loudspeakers:	Two Renkus-Heinz “Trap Jr/9” loudspeakers.

Test Chamber Descriptions:

1. Receive Room:	Volume = 8,291.3 ft^3 (234 m^3). Rotating vane and stationary diffusers. Temperature & humidity controlled. Isolation pads under the floor.
2. Source Room:	Volume = 7296.3 ft^3 (206.6 m^3). Stationary diffusers only. Temperature & humidity controlled.
3. TL Test Opening	Size = 14 ft wide by 10 ft high. Vibration break between source and receive rooms.