



E7002.01-113-11-R0
ACOUSTICAL PERFORMANCE TEST REPORT
ASTM C423

Rendered to

DFB SALES

Series/Model: DFB Artform Panel
Wrapped in Carnegie Xorel

Type: Absorption Panel

Summary of Test Results								
Data File No.	1/3 Octave Sound Absorption Coefficients at the Octave Band Frequencies						NRC	SAA
	125	250	500	1000	2000	4000		
E7002.01	0.11	0.35	0.97	0.91	0.49	0.35	0.70	0.69

Reference should be made to Intertek-ATI Report No. E7002.01-113-11 for complete test specimen description. This page alone is not a complete report.



Acoustical Performance Test Report

DFB SALES
21-07 Borden Avenue
Long Island City, New York 11101

Report	E7002.01-113-11
Test Date	05/06/15
Report Date	05/13/15

Project Scope

Architectural Testing, Inc., an Intertek company ("Intertek-ATI"), was contracted to conduct a sound absorption test. The complete test data is included as Appendix B of this report. The client provided the test specimen.

Test Methods

Testing for this project was conducted in accordance with the following standards. The equipment listed in the attachments meets the requirements of the following standards.

ASTM C423-09a, *Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method*

ASTM E795-05 (2012), *Standard Practices for Mounting Test Specimens During Sound Absorption Tests*

Test Procedure

All measurements were conducted in the HT test chamber receive room at Intertek-ATI located in York, Pennsylvania. The sensitivity of the microphones was checked before measurements were conducted. Empty room sound absorption measurements were conducted before the specimen was installed. Full room sound absorption measurements were conducted after the specimen was installed.

For the empty and full room measurements, ten decay measurements were conducted at each of the five microphone positions. Data was obtained 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 measurements.

Specimen Mounting

For the Type F3 mounting, the test specimen was placed 3 mm above the floor of the reverberation room with the absorptive side facing the sound field.

Test Calculations

The Sound Absorption Coefficient is the full room absorption minus the empty room absorption divided by the area of the sample in m^2 . The Sound Absorption Coefficient is dimensionless.

The Noise Reduction Coefficient (NRC) rating is the arithmetic average of the sound absorption coefficients at 250, 500, 1000 and 2000 hertz. The average is rounded to the nearest multiple of 0.05.

The Sound Absorption Average (SAA) rating is the arithmetic average of the sound absorption coefficients at the frequencies ranging from 200 to 2500 hertz. The average is rounded to the nearest multiple of 0.01.

Specimen Description

Eight, 1.22 m by 1.37 m panels, were arranged to produce the 2.44 m by 2.74 m test specimen. The fabric was 0.61 mm thick and weighed 0.13 kg/m^2 . The total weight of the specimen was 18.03 kg. Photographs are included in Appendix C.

Description	Thickness	Density	Weight
1" Thick Quiet-Core substrate	25.20 mm	105.56 kg/m^3	2.661 kg/m^2
	0.992 inch	6.59 lb/ft^3	0.545 lb/ft^2

Comments

The client did not supply a report drawing of the test specimen. Intertek-ATI will store samples of the test specimen for four years.



Intertek-ATI will service this report for the entire test record retention period. Test records, such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation, will be retained by Intertek-ATI for the entire test record retention period. The test record retention period ends four years after the test date.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. It is the exclusive property of the client so named herein and relates only to the specimen tested. This report is intended to help in the client's quality assurance program, but it does not represent a continuous or exhaustive evaluation of the specimen tested or of other products or materials that were not evaluated. The statements and data provided herein do not constitute approval, disapproval, certification, or acceptance of performance or materials.

This report may not be reproduced, except in full, without the written approval of Intertek-ATI.

For INTERTEK-ATI:

Kurt Golden
Project Facilitator - Acoustical Testing

Todd D. Kister
Laboratory Supervisor – Acoustical Testing

KAG:jmcs

Attachments (pages): This report is complete only when all attachments listed are included.

- Appendix-A: Equipment description (1)
- Appendix-B: Complete test results (2)
- Appendix-C: Photographs (1)



Revision Log

<u>Rev. #</u>	<u>Date</u>	<u>Page(s)</u>	<u>Revision(s)</u>
R0	05/13/15	N/A	Original Report Issue



E7002.01 -113-11

Appendix A

Instrumentation:

Instrument	Manufacturer	Model	Description	ATI Number	Date of Calibration
Data Acquisition Unit	National Instruments	PXI-1033	Data Acquisition card	65127	04/14 *
Receive Room Microphone	PBC Piezotronics	378B20	Microphone and Preamplifier	64907	11/14
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64908	11/14
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64909	11/14
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64910	11/13
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64911	11/14
Receive Room Environmental Indicator	Vaisala	HMW92	Temperature Humidity Sensor	64286	06/14
Microphone Calibrator	Norsonic	1251	Pistonphone Calibrator	65105	04/15

*- Note: The calibration frequency for this equipment is every two years per the manufacturer's recommendation.

Test Chamber:

	Volume	Description
Receive Room	234 m ³ (8291.3 ft ³)	Rotating vane and stationary diffusers Temperature and humidity controlled Isolation pads under the floor

N/A-Non Applicable



E7002.01-113-11

Appendix B

Complete Test Results



SOUND ABSORPTION
ASTM C 423

Test Date	05/06/15	
ATI No.	E7002.01	
Client	DFB Sales	
Specimen	DFB Artform Panel using 1" thick Quiet-Core substrate wrapped in Carnegie Xorel	
Operator	Daniel P. Platts	
Sample Area	6.69 m ²	
Mounting Type	Type F-3	
	Empty	Full
Temp C	21	21
RH %	49	50
B.P. (mb)	1022	

Freq (Hz)	Empty Room Absorption (m ²)	Uncertainty	Full Room Absorption (m ²)	Uncertainty	Absorption Coefficient	Relative Uncertainty
80	4.52	0.556	4.90	0.446	0.06	0.106
100	4.49	0.499	4.90	0.536	0.06	0.109
125	4.35	0.272	5.08	0.294	0.11	0.060
160	4.26	0.212	5.21	0.284	0.14	0.053
200	4.13	0.130	5.64	0.228	0.23	0.039
250	4.47	0.082	6.80	0.062	0.35	0.015
315	4.84	0.049	8.46	0.063	0.54	0.012
400	5.01	0.054	10.16	0.060	0.77	0.012
500	5.05	0.036	11.54	0.242	0.97	0.037
630	4.63	0.036	12.13	0.045	1.12	0.009
800	4.64	0.030	11.82	0.021	1.07	0.005
1000	4.74	0.028	10.82	0.031	0.91	0.006
1250	5.24	0.016	10.13	0.018	0.73	0.004
1600	5.27	0.030	9.20	0.013	0.59	0.005
2000	5.16	0.004	8.47	0.044	0.49	0.007
2500	5.36	0.018	8.45	0.174	0.46	0.026
3150	5.82	0.003	8.39	0.013	0.38	0.002
4000	6.01	0.008	8.33	0.008	0.35	0.002
5000	6.39	0.006	8.53	0.007	0.32	0.001

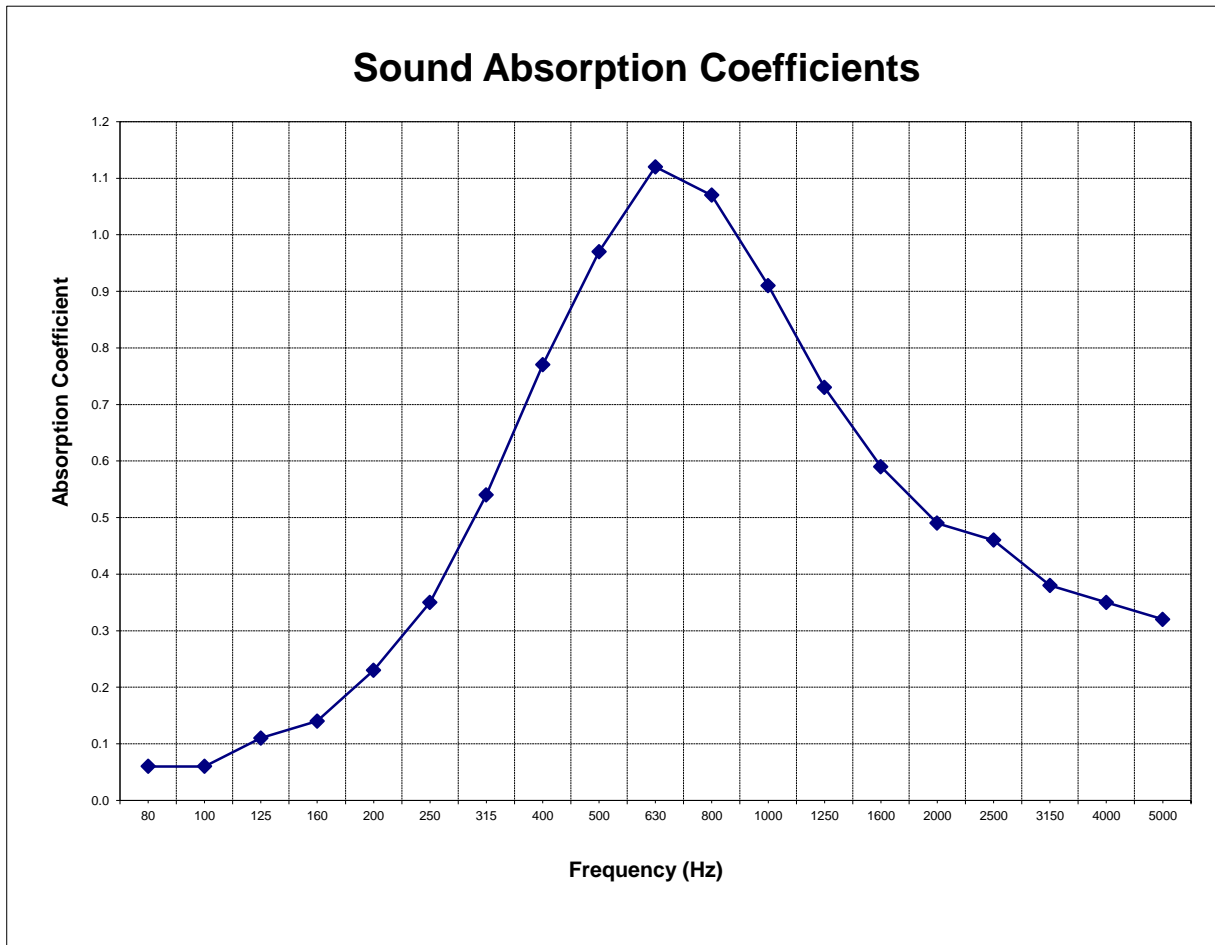
NRC Rating **0.70** *(Noise Reduction Coefficient)*
SAA Rating **0.69** *(Sound Absorption Average)*

- Notes:
- 1) The NRC rating is the arithmetic average of the sound absorption coefficients at 250, 500, 1000, and 2000 hertz. The average is rounded to the nearest multiple of 0.05.
 - 2) The SAA rating is the arithmetic average of the sound absorption coefficients at the frequencies ranging from 200 to 2500 hertz. The average is rounded to the nearest multiple of 0.01.



SOUND ABSORPTION ASTM C 423

Test Date	05/06/15	
ATI No.	E7002.01	
Client	DFB Sales	
Specimen	DFB Artform Panel using 1" thick Quiet-Core substrate wrapped in Carnegie Xorel	
Operator	Daniel P. Platts	
Sample Area	6.69 m ²	
Mounting Type	Type F-3	
	Empty	Full
Temp C	21.0	21.3
RH %	49	50
B.P. (mb)	1022	

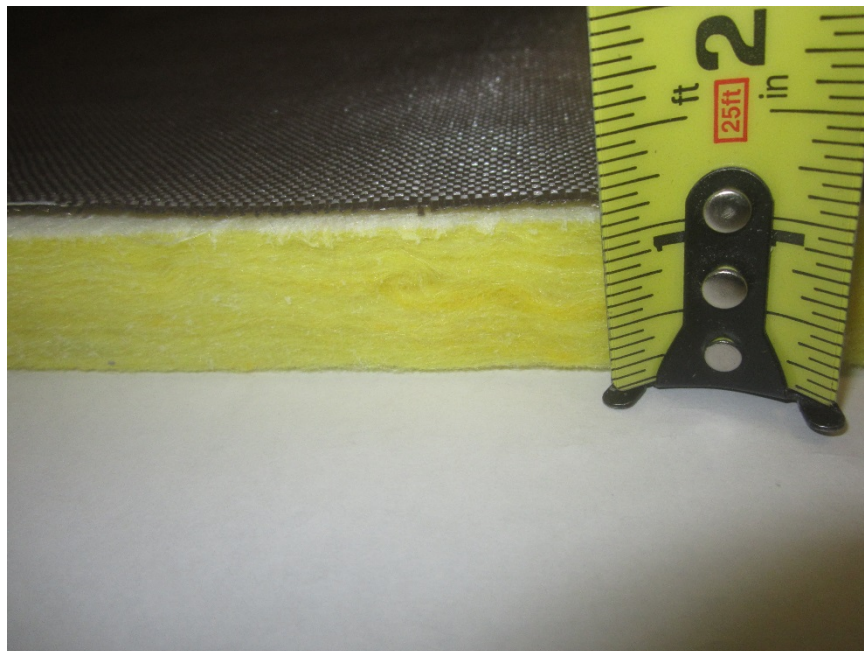


Appendix C

Photographs



View of Installed Specimen



Cross-Section View of Specimen