

9 WOOD, INC. ACOUSTICAL PERFORMANCE TEST REPORT

SCOPE OF WORK

ASTM C423 SOUND ABSORPTION TESTING ON SOUND TEX PLANKS WITH DUCT LINER,
ABSORPTION PANELS

REPORT NUMBER

K9724.02-303-11-R0

TEST DATE

05/20/20

ISSUE DATE

06/17/20

RETENTION DATE

06/17/24

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TEST REPORT FOR 9 WOOD, INC.

Report No.: K9724.02-303-11-R0

Date: 06/17/20

REPORT ISSUED TO

9 WOOD, INC.

999 South A Street

Springfield, Oregon 97477

SECTION 1

SCOPE

Intertek Building & Construction (B&C) was contracted by 9 Wood, Inc. to perform a sound absorption test. Results obtained are tested values and were secured by using the designated test methods. The complete test data is included herein. The client provided the test specimen. All measurements were conducted in the HT test chambers at Intertek B&C located in Lake Forest, California.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. Intertek B&C will service this report for the entire test record retention period. The test record retention period ends four years after the test date. Test records, such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation, will be retained for the entire test record retention period.

For INTERTEK B&C:

COMPLETED BY:	Marco T. Santa Rosa	REVIEWED BY:	Leeland S Hoover
TITLE:	Technician II	TITLE:	Laboratory Manager
SIGNATURE:	Acoustical Testing	SIGNATURE:	Acoustical Testing
DATE:	06/17/20	DATE:	06/17/20

MTSR:LSH

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SECTION 2

SUMMARY OF TEST RESULTS

SERIES/MODEL		Sound Tex Planks With Duct Liner						
SAMPLE TYPE		Absorption Panel						
MOUNTING TYPE		E400						
DATA FILE NO.	1/3 OCTAVE SOUND ABSORPTION COEFFICIENTS AT THE OCTAVE BAND FREQUENCIES						NRC	SAA
	125	250	500	1000	2000	4000		
K9724.01B	0.74	0.77	0.85	0.67	0.55	0.45	0.70	0.73

SECTION 3

TEST METHODS

The specimens were evaluated in accordance with the following:

ASTM C423-17, *Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method*

ASTM E795-16, *Standard Practices for Mounting Test Specimens During Sound Absorption Tests*

SECTION 4

SPECIMEN MOUNTING

For the Type E-400 mounting, the specimen was placed on the Type E test assembly so that the absorptive face of specimen was suspended 400 mm above the floor of the reverberation room. The perimeter of the specimen was sealed to the test assembly with duct tape. The perimeter of the test assembly was sealed to the floor with duct tape.

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SECTION 5 EQUIPMENT

The equipment listed below meets the requirements of the test methods stated in Section 3 of this report.

EQUIPMENT

INSTRUMENT	MANUFACTURER	MODEL	DESCRIPTION	ASSET #	CAL DATE
Data Acquisition Card	National Instruments	PXIe-4464	Data Acquisition Card	INT00392	09/19
Data Acquisition Card	National Instruments	PXIe-4464	Data Acquisition Card	INT00397	10/19
Data Acquisition Card	National Instruments	PXIe-4464	Data Acquisition Card	INT00395	10/19
Receive Room Microphone	PBC Piezotronics	378C20	Microphone and Preamplifier	INT00229	04/20
Receive Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	INT00230	04/20
Receive Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	INT01542	04/20
Receive Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	INT00232	04/20
Receive Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	INT00233	04/20
Receive Room Environmental Indicator	Comet	T7510	Receive Room	INT00299	05/19
Microphone Calibrator	Norsonic	1251	Acoustical Calibrator	INT00289	09/19

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

TEST CHAMBER

	VOLUME	DESCRIPTION
RECEIVE ROOM	231 m ³	Rotating vane and stationary diffusers Temperature and humidity controlled Isolation pads under the floor

N/A-Not Applicable

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SECTION 6

LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Marco Santa Rosa	Intertek B&C
Josue Vides	Intertek B&C

SECTION 7

TEST PROCEDURE

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.

The specimen was returned per the client's request.

SECTION 8

TEST CALCULATIONS

The Sound Absorption Coefficient is the full room absorption minus the empty room absorption divided by the area of the sample in m². 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.

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SECTION 9

TEST SPECIMEN DESCRIPTION

SERIES/MODEL	Sound Tex Planks With Duct Liner
SAMPLE TYPE	Absorption Panel
MOUNTING TYPE	E400

Fifteen, 2.44 m by 0.20 m (96" by 7-3/4"), panels were arranged to produce the 2.44 m by 2.74 m (96" by 108") test specimen. The total weight of the specimen was 87.45 kg (192.8 lbs).

DESCRIPTION	THICKNESS	WEIGHT
Sound Tex Planks	0.03 mm 3/4"	12.01 kg/m ² 2.46 lbs/ft ²
Duct Liner	38.1 mm 1-1/2"	1.07 kg/m ² 0.22 lbs/ft ²

* - Stated per Client/Manufacturer

Photographs are included in Section 11.

The client did not supply a report drawing of the test specimen.

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SECTION 10

TEST RESULTS

ASTM C423 SOUND ABSORPTION TEST



TEST DATE	05/20/20	
DATA FILE NO.	K9724.01B	
CLIENT	9Wood, Inc	
DESCRIPTION	Series/Model: Sound Tex Planks With Duct Liner	
TECHNICIAN	Marco T Santa Rosa	
SPECIMEN AREA	6.69 m ²	
MOUNTING TYPE	E400	
	EMPTY	FULL
TEMP °C	20.4	20.7
RH %	50	51
B.P. (mb)	1018	1018

FREQ (Hz)	EMPTY ROOM ABSORPTION (m ²)	UNCERTAINTY	FULL ROOM ABSORPTION (m ²)	UNCERTAINTY	ABSORPTION COEFFICIENT	RELATIVE UNCERTAINTY
80	6.05	0.148	10.21	0.105	0.62	0.027
100	7.59	0.106	12.29	0.077	0.70	0.020
125	8.44	0.061	13.40	0.078	0.74	0.015
160	8.43	0.098	13.02	0.050	0.69	0.016
200	7.08	0.084	11.68	0.028	0.69	0.013
250	5.94	0.038	11.11	0.014	0.77	0.006
315	6.03	0.019	11.85	0.029	0.87	0.005
400	5.81	0.034	11.61	0.025	0.87	0.006
500	5.76	0.023	11.43	0.021	0.85	0.005
630	5.81	0.012	11.19	0.019	0.80	0.003
800	6.29	0.021	11.21	0.018	0.74	0.004
1000	7.41	0.010	11.88	0.008	0.67	0.002
1250	8.19	0.017	12.30	0.004	0.61	0.003
1600	8.89	0.007	13.01	0.007	0.62	0.001
2000	10.44	0.009	14.14	0.144	0.55	0.022
2500	12.97	0.011	17.75	0.160	0.72	0.024
3150	16.81	0.006	20.32	0.007	0.52	0.001
4000	22.44	0.008	25.44	0.003	0.45	0.001
5000	30.35	0.007	32.77	0.004	0.36	0.001

NRC RATING	0.70	(Noise Reduction Coefficient)
SAA RATING	0.73	(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.

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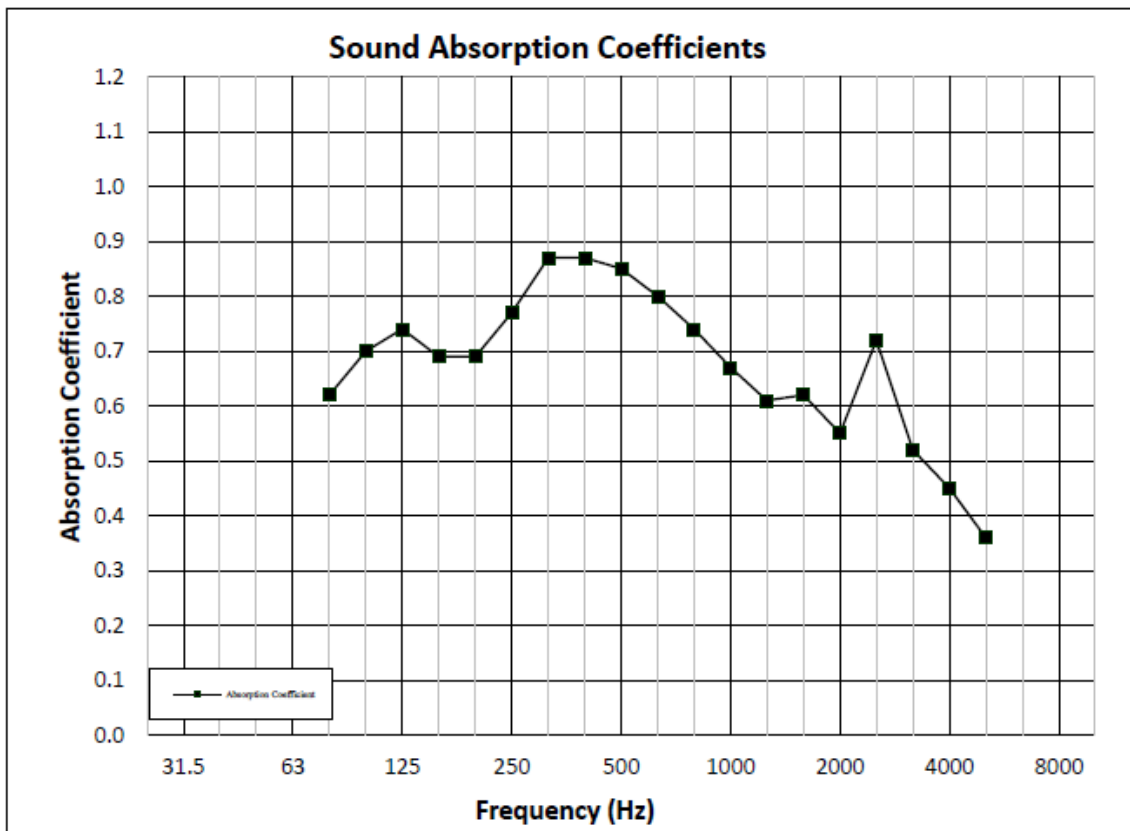
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TECHNICIAN	Marco T Santa Rosa	
SPECIMEN AREA	6.69 m ²	
MOUNTING TYPE	E400	
	EMPTY	FULL
TEMP °C	20.4	20.7
RH %	50	51
B.P. (mb)	1018	1018



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SECTION 11

PHOTOGRAPHS



Photo No. 1
View of Test Specimen



Photo No. 2
Cross Section View of Test Specimen



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SECTION 12

REVISION LOG

REVISION #	DATE	PAGES	REVISION
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