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Acoustical Testing Laboratory

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TEST REPORT

for

Palziv North America
7966 NC 56 Hwy
Louisburg, NC 27549
Michele LaMori/ 919-725-4762

Sound Transmission Loss Test

ASTM E 90 – 04 / E 413 - 10

On

6 Inch Concrete Slab Floor – Suspended Ceiling Assembly Overlaid with; Hardwood Flooring on ECO Cork Foam Underlayment

Report Number: NGC 5014098

Assignment Number: G-1048

Test Date: 6/13/2014

Report Approval Date: 7/9/2014

Submitted by: _____
Andrew E. Heuer
Senior Test Engineer

Reviewed by: _____
Robert J. Menchetti
Director

The results reported above apply to specific samples submitted for measurement. No responsibility is assumed for performance of any other specimen. The laboratory's accreditation or any of its test reports in no way constitute or imply product certification, approval, or endorsement by NVLAP or any agent of the U.S. Government. This report may not be reproduced except in full, without written approval of the laboratory.

Revision Summary:

Date	SUMMARY
Approval Date: 7/9/2014	Original issue date. Original NGCTS report: NGC 5014098

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Report Number: NGC 5014098

Test Method: This test method conforms explicitly with the American Society for Testing and Materials Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements - Designation: E 90 - 04 / E 413 - 10.

Specimen Description: 6 inch concrete slab floor- suspended ceiling assembly overlaid with, according to client, Hardwood Flooring on ECO Cork Foam underlayment.

The test specimen was a floor-suspended ceiling assembly and was observed to consist of the following:
All weights and dimension are averaged:

- 1 layer of, according to client, Hardwood Flooring. The hardwood flooring was adhered to the underlayment with Roberts 1407 acrylic adhesive using a 6.35mm x 6.35 mm x 6.35 mm (1/4 in. x 1/4 in. x 1/4 in.) V-notch trowel. Observed dimensions: Random length planks. Measured thickness: 18.67 mm (0.735 in.) Measured weight: 13.96 kg/m^2 (2.86 PSF)

- 1 layer of, according to the client, ECO Cork Foam underlayment. The underlayment seams were butted and taped together, and was adhered to the concrete slab with Roberts 1407 acrylic adhesive using a 6.35 mm x 6.35 mm x 6.35 mm (1/4 in. x 1/4 in. x 1/4 in.) V-notch trowel. Measured thickness: 3.25 mm (0.1280 in.) Measured weight: 0.40 kg/m^2 (0.08 PSF)

- 152.4 mm (6 in.) thick reinforced concrete slab, weighing: 366.2 kg/m^2 (75.0 PSF)

- 1 layer of, 88.9 mm (3.5 in.) unfaced fiberglass batt insulation which was laid over the suspended grid system parallel to the main tees. Sample weight: 0.78 kg/m^2 (0.16 PSF)

- Gypsum wallboard ceiling grid suspension system. System is comprised of main tees and cross tees. The main tees were placed 1219.2 mm (48 in.) o.c. and the cross tees were placed 609.6 mm (24 in.) o.c. 16 gauge galvanized tie wire was used to attach the main tees to concrete anchors, located 1219.2 mm (48 in.) o.c. along the longitudinal axis, suspending the grid 304.8 mm (12 in.) below the concrete slab.

- 1 layer of, 15.9 mm (5/8 in.) Type X gypsum wallboard. The wallboard was attached parallel to the suspended grid suspension system mains, using 28.6 mm (1-1/8 in.) Type S drywall screws spaced 304.8 mm (12 in.) o.c. The wallboard joints were taped. Suspended gypsum wallboard grid ceiling weighted: 11.23 kg/m^2 (2.3 PSF)

The overall weight of the test assembly: 392.51 kg/m^2 (80.40 PSF)

The perimeter of the test frame was sealed with a rubber gasket and a sand filled trough.
The test frame was structurally isolated from the receiving room.

Specimen size: 3657.6 mm x 4876.8 mm (12 ft. x 16 ft.)
Conditioning: Concrete slab cured for a minimum of 28 days. Adhesive cured a minimum of 24 hours.
Test Results: The results of the tests are given on pages 4 and 5 of the report.

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Sound Transmission Loss Test Data

Test: ASTM E 90 - 04 / ASTM E 413 - 10

Test Report: NGC5014098 Date: 6/13/2014
Specimen Size [m²]: 17.8

Source room		Receiving room	
Volume [m³]:	53.2	Volume [m³]:	60.5
Rm Temp [°C]:	23.5	Rm Temp [°C]:	21
Humidity [%]:	68	Humidity [%]:	65

Sound Transmission Class STC [dB]: 66

Sum of Unfavorable Deviations [dB]: 28
Max. Unfavorable Deviation [dB]: 6 at 315 Hz

Frequency [Hz]	STL [dB]	L1 [dB]	L2 [dB]	d [dB/s]	Corr. [dB]	u.Dev. [dB]	ΔSTL
100	50	103.9	63.0	15.0	9.1		2.83
125	48	106.3	66.2	18.5	8.0	2	2.31
160	49	107.7	67.2	14.7	8.6	4	2.88
200	51	107.3	64.5	16.3	8.2	5	1.07
250	55	107.2	60.0	19.2	7.9	4	1.36
315	56	103.2	55.1	19.2	7.9	6	0.67
400	60	102.9	50.6	20.2	7.8	5	1.07
500	64	102.5	46.0	22.0	7.5	2	0.49
630	67	102.1	42.0	23.9	6.8		0.40
800	71	102.2	37.8	24.2	6.6		0.59
1000	73	98.6	31.5	26.0	5.9		0.35
1250	78	97.7	25.3	28.3	5.6		0.43
1600	80	96.6	22.6	29.1	6.0		0.70
2000	79	99.4	26.1	32.0	5.7		0.72
2500	78	100.1	26.6	34.3	4.6		0.72
3150	80	98.9	23.8	38.1	5.0		0.56
4000	81	95.3	18.6	43.1	4.3		0.74
5000	78	87.6	12.8	48.2	3.2		0.60

STL = Sound Transmission Loss, dB
L1 = Source Room Level, dB
L2 = Receiving Room Level, dB
d = Decay Time, dB/second
Δ STL = Uncertainty for 95% Confidence Level

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Sound Transmission Loss Test Data

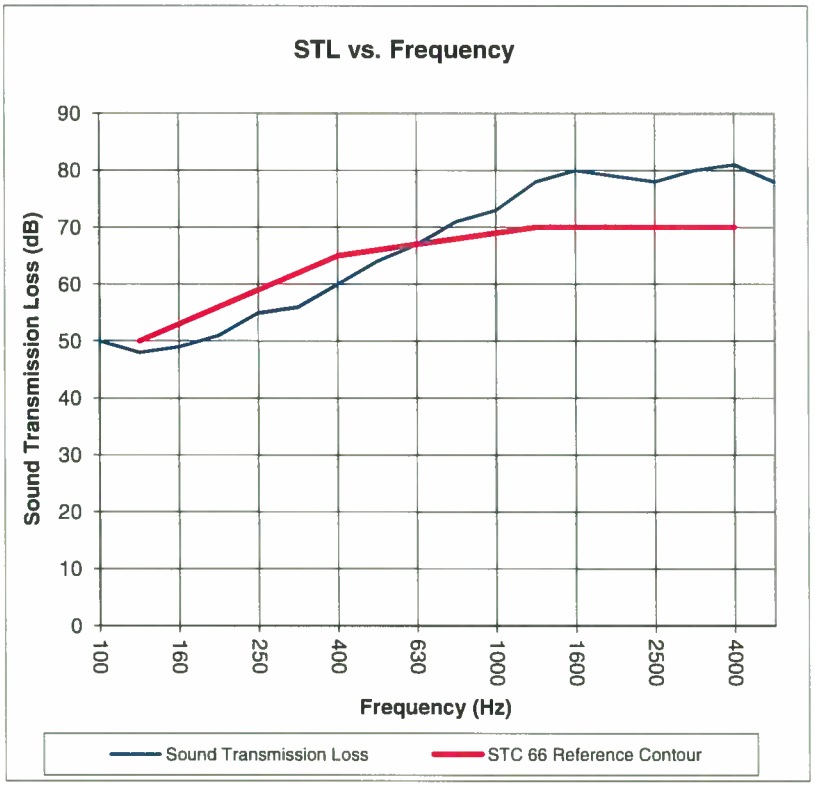
Per: ASTM E 90 - 04 / ASTM E 413 - 10

Test Report: NGC5014098
Test Date: 6/13/2014
Specimen Size [m²]: 17.8

Sound Transmission Class STC = 66 dB

Frequency [Hz]	STL [dB]	ΔSTL	
100	50	2.83	
125	48	2.31	
160	49	2.88	
200	51	1.07	
250	55	1.36	
315	56	0.67	
400	60	1.07	
500	64	0.49	
630	67	0.40	
800	71	0.59	
1000	73	0.35	
1250	78	0.43	
1600	80	0.70	
2000	79	0.72	
2500	78	0.72	
3150	80	0.56	
4000	81	0.74	
5000	78	0.60	*

* Due to high insulating value of specimen, background levels limit results at these frequencies.



STL = Sound Transmission Loss, dB
Δ STL = Uncertainty for 95% Confidence Level

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