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TEST REPORT

for

Palziv North America
7966 NC 56 Hwy
Louisburg, NC 27549

Sound Transmission Loss Test
ASTM E 90 – 04 / E 413 - 10

On

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

Report Number: NGC 5014095

Assignment Number: G-1048

Test Date: 6/10/2014

Report Approval Date: 7/9/2014

Submitted by: _____
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Director

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Revision Summary:

Date	SUMMARY
Approval Date: 7/9/2014	Original issue date. Original NGCTS report: NGC 5014095

Report Number: NGC 5014095

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, Engineered Wood 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, Engineered Wood Flooring. The engineered wood flooring was floating on the underlayment. Observed dimensions: Random length planks
  Measured thickness: 9.63 mm (0.379 in.) Measured weight: 6.69 kg/m^2 (1.37 PSF)

- 1 layer of, according to the client, ECO Cork Foam underlayment. The underlayment seams were butted and taped together, and was floating over the concrete slab. 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 is: 385.24 kg/m^2 (78.91 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.
Test Results: The results of the tests are given on pages 4 and 5 of the report.

Sound Transmission Loss Test Data

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

Test Report: NGC5014095 Date: 6/10/2014
Specimen Size [m²]: 17.8

Source room		Receiving room	
Volume [m³]:	53.2	Volume [m³]:	60.5
Rm Temp [°C]:	23	Rm Temp [°C]:	22
Humidity [%]:	63	Humidity [%]:	66

Sound Transmission Class STC [dB]: 66

Sum of Unfavorable Deviations [dB]: 29
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	44	103.8	64.7	32.2	4.9		3.41
125	47	106.0	66.4	21.2	7.4	3	1.85
160	48	107.9	68.6	16.4	8.7	5	3.57
200	53	107.1	62.8	16.2	8.8	3	1.00
250	55	106.9	60.4	17.5	8.5	4	1.17
315	56	104.0	55.7	17.2	7.7	6	0.79
400	60	103.2	51.2	17.0	8.0	5	1.05
500	63	101.8	46.7	18.0	8.0	3	0.46
630	67	101.0	41.2	20.3	7.2		0.53
800	73	101.8	36.6	20.4	7.8		0.49
1000	75	98.9	31.3	22.1	7.4		0.73
1250	78	97.5	26.3	24.4	6.8		1.10
1600	79	97.3	24.8	25.6	6.6		1.52
2000	78	99.8	27.3	29.5	5.5		0.97
2500	78	100.6	27.7	32.1	5.1		0.65
3150	79	99.2	24.9	33.6	4.7		0.59
4000	80	96.0	20.8	37.3	4.8		1.02
5000	79	88.7	14.0	41.9	4.3		1.22

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

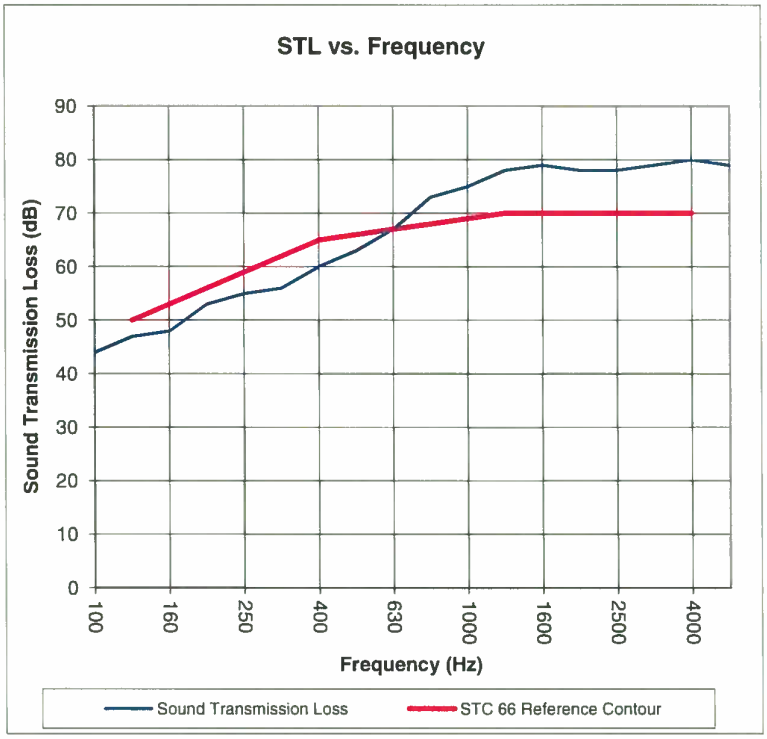
Sound Transmission Loss Test Data

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

Test Report: NGC5014095
Test Date: 6/10/2014
Specimen Size [m²]: 17.8

Sound Transmission Class STC = 66 dB

Frequency [Hz]	STL [dB]	ΔSTL
100	44	3.41
125	47	1.85
160	48	3.57
200	53	1.00
250	55	1.17
315	56	0.79
400	60	1.05
500	63	0.46
630	67	0.53
800	73	0.49
1000	75	0.73
1250	78	1.10
1600	79	1.52
2000	78	0.97
2500	78	0.65
3150	79	0.59
4000	80	1.02
5000	79	1.22



* 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