



# Acoustical Testing Laboratory



Accredited by the National Voluntary  
Laboratory Accreditation Program  
for the specific scope of accreditation  
under Lab Code 200291

## TEST REPORT

for

### Palziv North America Inc.

7966 NC 56 Highway  
Louisburg, NC 27549  
Sam Saladino / 919-237-9250

### Sound Transmission Loss Test

ASTM E 90 - 04 / E 413 - 10

On

### 6 Inch Concrete Slab Floor Suspended Gypsum Board Ceiling Assembly Overlaid with; Laminate Wood Flooring over FMHD 72231A Underlayment

Report Number: NGC 5013075

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Assignment Number: G-935

Test Date: 7/25/2013

Report Approval Date: 8/16/2013

Submitted by: \_\_\_\_\_

Andrew E. Heuer  
Senior Test Engineer

Reviewed by: \_\_\_\_\_

Robert J. Menchetti  
Director

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Report Number: NGC 5013075

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-ceiling assembly with a suspended gypsum board ceiling, overlaid with laminate wood flooring over, according to client, FMHD 72231A underlayment.

The test specimen was a floor-ceiling assembly and was observed to consist of the following:

- 1 layer of, laminate wood flooring, plank size: 203.2 mm x 1206.5 mm x 9.98 mm (8 in. x 47-1/2 in. x 0.393 in.). Sample weight was 9.67 kg/m<sup>2</sup> (1.98 PSF).
- 1 layer of, according to client, FMHD 72231A. The underlayment seams were fitted together. The measured sample thickness was 1.82 mm (0.0715 in.). Sample weight was 0.10 kg/m<sup>2</sup> (0.02 PSF).
- 152.4 mm (6 in.) thick reinforced concrete slab, weighing 366.2 kg/m<sup>2</sup> (75.0 PSF).
- 1 layer of 88.9 mm (3-1/2 in.) fiberglass, unfaced, batt insulation, friction fit into joist cavities. Sample weight was 0.78 kg/m<sup>2</sup> (0.16 PSF).
- Gypsum board ceiling grid suspension system. System is comprised of main tees and cross tees. The main tees were placed 1219.2 mm (48 in.) on center and the cross tees were placed 609.6 mm (24 in.) on center. 16 gauge galvanized tie wire was used to attach the main tees to concrete anchors, located 1219.2 mm (48 in.) on center 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 board. The board was attached parallel to the suspended grid suspension system mains using 31.8 mm (1-1/4 in.) Type S drywall screws 304.8 mm (12 in.) on center. The board joints were taped. Suspended gypsum board grid ceiling weight was 11.23 kg/m<sup>2</sup> (2.30 PSF).

The overall weight of the test assembly was 387.92 kg/m<sup>2</sup> (79.46 PSF).

The perimeter of the concrete slab was sealed with a rubber gasket and a sand filled trough. The test assembly 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 3 and 4.

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## Sound Transmission Loss Test Data

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

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Test Report: NGC5013075

Date: 7/25/2013

Specimen Size [m<sup>2</sup>]: 17.8

### Source room

Volume [m<sup>3</sup>]: 53.2

Rm Temp [°C]: 24

Humidity [%]: 54

### Receiving room

Volume [m<sup>3</sup>]: 60.5

Rm Temp [°C]: 22

Humidity [%]: 50

### Sound Transmission Class STC [dB]: 67

Sum of Unfavorable Deviations [dB]: 32

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	45	105.9	65.9	32.6	5.0		3.56
125	48	105.8	65.0	20.8	7.1	3	2.29
160	49	108.1	68.5	13.6	9.5	5	2.85
200	52	107.3	64.0	14.4	8.7	5	0.80
250	56	108.1	60.6	17.0	8.5	4	1.07
315	57	104.4	56.0	16.9	8.5	6	0.76
400	60	103.9	52.3	16.8	8.4	6	1.16
500	64	103.2	47.1	18.0	7.9	3	0.47
630	68	102.3	42.0	19.7	7.6		0.69
800	72	102.2	37.6	20.4	7.4		0.51
1000	74	99.2	31.8	21.8	6.6		0.63
1250	79	98.4	26.1	24.2	6.8		0.64
1600	80	98.0	24.7	25.7	6.7		0.95
2000	78	100.6	27.9	29.6	5.3		0.71
2500	79	101.4	27.8	32.2	5.3		0.74
3150	81	100.3	24.0	34.0	4.7		1.00
4000	82	97.4	19.7	38.3	4.3		1.65
5000	81	90.1	13.1	44.2	4.0		1.62

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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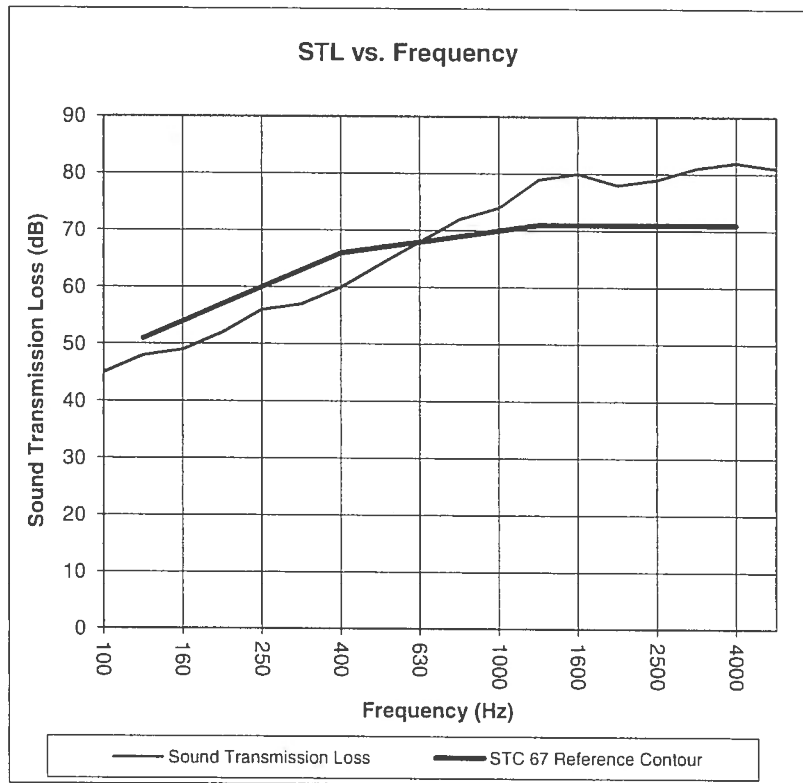
## Sound Transmission Loss Test Data

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

Test Report: NGC5013075  
 Test Date: 7/25/2013  
 Specimen Size [m²]: 17.8

**Sound Transmission Class STC = 67 dB**

Frequency [Hz]	STL [dB]	ΔSTL
100	45	3.56
125	48	2.29
160	49	2.85
200	52	0.80
250	56	1.07
315	57	0.76
400	60	1.16
500	64	0.47
630	68	0.69
800	72	0.51
1000	74	0.63
1250	79	0.64
1600	80	0.95
2000	78	0.71
2500	79	0.74
3150	81	1.00
4000	82	1.65
5000	81	1.62



\* 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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