

## TEST REPORT

for

**American Fiber Cushion, Inc.**

P.O. Box 2084

Dalton, GA 30721

Jack Weitz / 706-217-1900

### Sound Transmission Loss Test

ASTM E 90 – 09 / E 413 – 10

On

**6 Inch Concrete Slab Floor – Ceiling Assembly  
With a Suspended Wallboard Ceiling Overlaid with;  
Carpet and Matrix Carpet Cushion**


Report Number: NGC 5016032

Assignment Number: G-1258


Test Date: 02/24/2016

Report Approval Date: 03/18/2016

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.

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**Revision Summary:**

<b>Date</b>	<b>SUMMARY</b>
Approval Date: 03/18/2016	Original issue date: 03/18/2016 Original NGCTS report: NGC 5016032

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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 - 09 / E 413 - 10.

Specimen Description: 6 inch concrete slab floor-ceiling assembly, with a suspended wallboard ceiling overlaid with according to client, Carpet with Matrix Carpet Cushion.

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

All measured weights and dimensions are averaged:

- 1 layer of, 44 oz. Carpet. Measured average thickness: 11.13 mm (0.438 in.). Measured weight: 2.73 kg/m<sup>2</sup> (0.56 PSF)
- 1 layer of, according to client, Matrix Carpet Cushion. Measured thickness: 9.65 mm (0.38 in.) .Measured weight: 0.781 kg/m<sup>2</sup> (0.16 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 (3.5 in.) unfaced fiberglass batt insulation which was laid over the suspended grid system parallel to the main tees. Sample weight: 0.78 kg/m<sup>2</sup> (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 weighed: 11.23 kg/m<sup>2</sup> (2.30 PSF)

The overall weight of the test assembly is: 381.67 kg/m<sup>2</sup> ( 78.18 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.

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**Sound Transmission Loss Test Data**

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

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Test Report: NGC 5016032

Date: 2/24/2016

Specimen Size [m²]: 17.8

**Source room**

Volume [m³]: 86

Rm Temp [°C]: 20

Humidity [%]: 54

**Receiving room**

Volume [m³]: 124

Rm Temp [°C]: 19

Humidity [%]: 70

**Sound Transmission Class STC [dB]: 61**

Sum of Unfavorable Deviations [dB]: 29

Max. Unfavorable Deviation [dB]: 6 at 125 Hz

Frequency [Hz]	STL [dB]	L1 [dB]	L2 [dB]	d [dB/s]	Corr. [dB]	u.Dev. [dB]	ΔSTL
80	43	99.5	59.4	25.1	3.0		2.42
100	40	102.2	66.6	21.3	4.4		5.09
125	39	103.1	68.6	17.0	4.5	6	2.59
160	43	103.7	66.5	14.8	5.8	5	3.49
200	50	103.7	60.0	13.2	6.3	1	3.22
250	50	99.8	55.7	15.1	5.8	4	3.08
315	52	97.2	51.0	14.2	5.8	5	2.97
400	55	95.4	45.9	14.7	5.5	5	2.19
500	59	97.0	43.0	16.0	5.0	2	2.15
630	61	97.3	41.1	16.0	4.8	1	2.12
800	63	94.8	36.9	16.6	5.0		1.69
1000	67	91.0	29.6	16.1	5.6		2.01
1250	72	88.5	21.2	17.3	4.7		2.88
1600	75	90.2	19.9	18.6	4.7		2.96
2000	78	92.8	18.9	21.7	4.1		3.54
2500	79	95.6	20.5	23.7	3.9		4.17
3150	81	95.7	18.3	25.2	3.6		4.71
4000	85	95.0	13.3	28.3	3.2		4.91
5000	83	89.0	8.7	32.0	2.7		4.91

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

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**Sound Transmission Loss Test Data**

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

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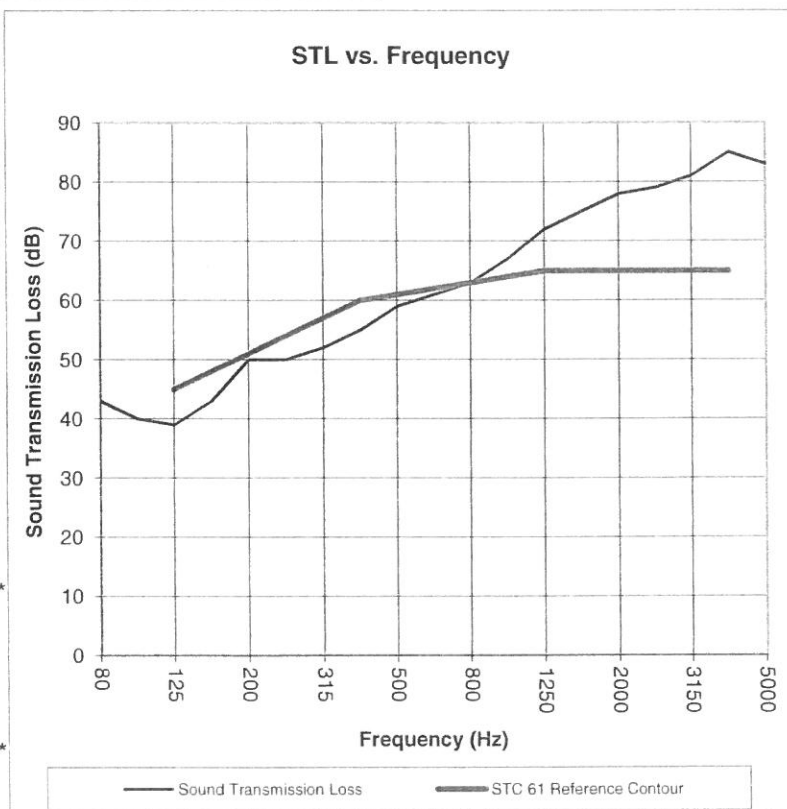
Test Date: 2/24/2016

Specimen Size [m²]: 17.8

**Sound Transmission Class STC = 61 dB**

Frequency	STL	ΔSTL
[Hz]	[dB]	
80	43	2.42
100	40	5.09
125	39	2.59
160	43	3.49
200	50	3.22
250	50	3.08
315	52	2.97
400	55	2.19
500	59	2.15
630	61	2.12
800	63	1.69
1000	67	2.01
1250	72	2.88
1600	75	2.96
2000	78	3.54
2500	79	4.17
3150	81	4.71
4000	85	4.91
5000	83	4.91

\* 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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