# TEST REPORT

for

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## Sound Transmission Loss Test

**ASTM E 90 – 09 / E 413 – 10**

On

**6 Inch Concrete Slab Floor – Ceiling Assembly**
**Overlaid with 2 layers of Regupol Vibration 300 (17 mm)**
**and a 4 Inch Concrete Slab**

Report Number: NGC 5016057

Assignment Number: G-1296

Test Date: 05/11/2016

Report Approval Date: 05/19/2016

Submitted by: _____
Anthony J. Rivers
Test Technician

Reviewed by: _____
Robert J. Menchetti
Director

## Revision Summary:

| Date | SUMMARY |
|---|---|
| Approval Date: 05/19/2016 | Original issue date: 05/19/2016<br>Original NGCTS report #: NGC 5016057 |

Report Number: NGC 5016057 

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, overlaid with according to client, 2 layers of Regupol Vibration 300 (17 mm) and a 4 inch concrete slab.

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

- 101.6 mm (4 in.) thick reinforced concrete slab, weighing: 223.30 kg/m$^2$ (45.74 PSF)
- 2 layers of, according to the client, Regupol Vibration 300 (17 mm). The Regupol Vibration 300 (17 mm) was floating on the 6 inch concrete slab. Measured thickness: 36.07 mm (1.42 in.). Measured weight: 14.45 kg/m$^2$ (2.96 PSF)
- 152.4 mm (6 in.) thick reinforced concrete slab, weighing: 366.15 kg/m$^2$ (75.0 PSF)

The overall weight of the test assembly is: 603.90 kg/m$^2$ (123.70 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: NGC 5016057 Date: 5/11/2016
Specimen Size [m²]: 17.8

| Source room | | Receiving room | |
|---|---|---|---|
| Volume [m³]: | 84.75 | Volume [m³]: | 128 |
| Rm Temp [°C]: | 20 | Rm Temp [°C]: | 20 |
| Humidity [%]: | 60 | Humidity [%]: | 60 |

**Sound Transmission Class STC [dB]: 59**

Sum of Unfavorable Deviations [dB]: 29
Max. Unfavorable Deviation [dB]: 6 at 250 Hz

| Frequency [Hz] | STL [dB] | L1 [dB] | L2 [dB] | d [dB/s] | Corr. [dB] | u.Dev. [dB] | ΔSTL |
|---|---|---|---|---|---|---|---|
| 80 | 39 | 100.2 | 64.0 | 29.5 | 2.8 | | 2.67 |
| 100 | 40 | 103.5 | 67.7 | 21.2 | 4.1 | | 4.70 |
| 125 | 38 | 103.6 | 71.0 | 16.0 | 5.4 | 5 | 1.75 |
| 160 | 44 | 105.7 | 66.6 | 16.3 | 4.9 | 2 | 1.28 |
| 200 | 45 | 104.9 | 65.2 | 15.1 | 5.3 | 4 | 1.19 |
| 250 | 46 | 102.3 | 61.2 | 15.9 | 4.9 | 6 | 1.16 |
| 315 | 50 | 102.1 | 57.0 | 15.1 | 4.9 | 5 | 1.39 |
| 400 | 53 | 99.7 | 51.6 | 16.7 | 4.9 | 5 | 1.52 |
| 500 | 57 | 101.6 | 49.2 | 16.8 | 4.7 | 2 | 1.21 |
| 630 | 60 | 102.4 | 47.0 | 17.3 | 4.6 | | 1.04 |
| 800 | 64 | 101.3 | 42.6 | 17.2 | 5.3 | | 0.65 |
| 1000 | 67 | 98.6 | 37.0 | 16.6 | 5.3 | | 0.97 |
| 1250 | 69 | 95.9 | 31.0 | 18.1 | 4.1 | | 1.08 |
| 1600 | 73 | 97.3 | 28.4 | 19.9 | 4.1 | | 0.71 |
| 2000 | 76 | 98.9 | 26.8 | 21.9 | 3.9 | | 1.21 |
| 2500 | 77 | 100.9 | 26.9 | 23.7 | 3.0 | | 1.27 |
| 3150 | 79 | 100.4 | 24.9 | 26.0 | 3.5 | | 1.75 |
| 4000 | 80 | 97.6 | 20.0 | 29.8 | 2.4 | | 2.43 |
| 5000 | 78 | 91.2 | 14.9 | 34.5 | 1.8 | | 3.35 |

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

# Sound Transmission Loss Test Data

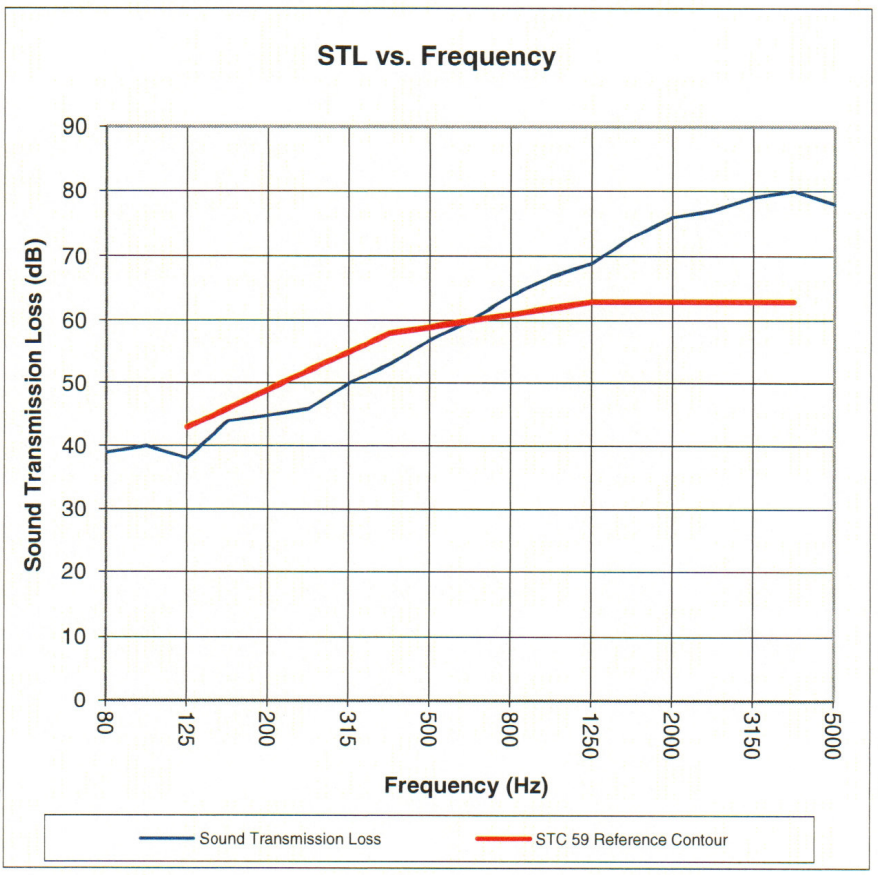


**Per: ASTM E 90 - 04 / ASTM E 413 - 10**

Test Report: NGC 5016057
Test Date: 5/11/2016
Specimen Size [m²]: 17.8

**Sound Transmission Class STC = 59 dB**

| Frequency [Hz] | STL [dB] | ΔSTL | |
|---|---|---|---|
| 80 | 39 | 2.67 | |
| 100 | 40 | 4.70 | |
| 125 | 38 | 1.75 | |
| 160 | 44 | 1.28 | |
| 200 | 45 | 1.19 | |
| 250 | 46 | 1.16 | |
| 315 | 50 | 1.39 | |
| 400 | 53 | 1.52 | |
| 500 | 57 | 1.21 | |
| 630 | 60 | 1.04 | |
| 800 | 64 | 0.65 | |
| 1000 | 67 | 0.97 | |
| 1250 | 69 | 1.08 | |
| 1600 | 73 | 0.71 | |
| 2000 | 76 | 1.21 | |
| 2500 | 77 | 1.27 | |
| 3150 | 79 | 1.75 | |
| 4000 | 80 | 2.43 | |
| 5000 | 78 | 3.35 | * |




* 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