



Acoustical Testing Laboratory



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TEST REPORT

For

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Impact Sound Transmission Test

ASTM E 492 - 09 / ASTM E 989 - 06

On

6 Inch (152mm) Concrete Slab Overlaid with Engineered Hardwood Flooring Adhered with Sikabond-T35 Adhesive over 10mm Impacta-Regupol Probase Underlayment Adhered with Sikabond-T35 Adhesive With Suspended Gypsum Board Ceiling

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Report Number: NGC 7011095

Assignment Number: G-709

Test Date: 08/10/2011

Report Date: 09/12/2011

Submitted by:

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Test and Quality Engineer

Reviewed by:

Robert J. Menchetti
Director

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Report Number: NGC 7011095

Test Method: This test method is in accordance with American Society for Testing and Materials Standard Test Method for Laboratory Measurement of Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine - Designation: E 492-09 / E 989-06.
The uncertainty limits of each tapping machine location met the precision requirements of section A1.4 of ASTM E 492-09.

Specimen Description: 6 inch (152mm) Concrete Slab including suspended grid 5/8 inch gypsum board ceiling system, overlaid with, according to client, Engineered wood flooring with Sikabond-T35 adhesive over 10mm Impacta-Regupol Probase underlayment adhered with Sikabond-T35 adhesive.

The test specimen was a floor-ceiling assembly consisting of the following:

- 1 layer of 13.1mm (0.515 in.) Hard Maple Select V Engineered Hardwood flooring. Samples were 127mm (5 in.) wide, by random length planks. Sample weight was 7.5 kg/m² (1.54 PSF).
- 1 layer of Sikabond-T35 adhesive. Sample was troweled on using client supplied P5 trowel.
- 10mm-Impacta Regupol Probase underlayment, 10.0mm (0.395 in.) thick. Sample weight was 7.7 kg/m² (1.58 PSF).
- 1 layer of Sikabond-T35 adhesive. Sample was troweled on using client supplied P5 trowel.
- 152.4mm (6 in.) thick reinforced concrete slab 366.2 kg/m² (75.0 PSF).
- 88.9mm (3-1/2 in.) fiberglass unfaced batt insulation. Sample weight was 0.78 kg/m² (0.16 PSF). The insulation was laid over the suspended grid system parallel with the main tee's.
- Gypsum board ceiling grid suspension system. System is comprised of main tees and cross tees. The main tees were placed 1219.2mm (48 in.) on center and the cross tees were placed 609.6mm (24 in.) on center. 16 gauge galvanized tie wire was used to attach the main tees to concrete anchors, located 1219.2mm (48 in.) o.c. along the longitudinal axis, suspending the grid 304.8mm (12 in.) below the concrete slab.
- 1 layer of 15.9mm (5/8 in.) Type X gypsum board. Sample was observed to be 15.9mm (0.628 in.) thick and weighed 11.2 kg/m² (2.3 PSF). The board was attached 304.8mm (12 in.) o.c. parallel to suspended grid suspension system mains, using 31.8mm (1.250 in.) Type S drywall screws. The board joints were taped.

The overall weight of the test assembly is 393.4 kg/m² (80.58 PSF).

The perimeter of the concrete slab was sealed with rubber gasketing and a sand filled trough. The test assembly is structurally isolated from the receiving room.

Test Floor Size: 3657.6mm x 4876.8mm (12 ft. x 16 ft.).

Conditioning: Adhesive cured for minimum of 24 hours.
Concrete cured minimum of 28 days.

Test Results: The results of the tests are given on pages 3 and 4.

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Normalized impact sound pressure level						
Test: ASTM E 492 - 09 / ASTM E 989 - 06						
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Test Report: NGC7011095			Date: 8/10/2011			
Specimen Size [m ²]: 17.8						
Source room			Receiving room			
Rm Temp [°C]: 19.5			Volume [m ³]: 60			
Humidity [%]: 50			Rm Temp [°C]: 23			
			Humidity [%]: 48			
Impact Insulation Class IIC [dB]: 72						
Sum of Unfavorable Deviations [dB]: 31						
Max. Unfavorable Deviation [dB]: 8			at 100 Hz			
Frequency	L _n	L2	d	Corr.	u.Dev.	ΔL _n
[Hz]	[dB]	[dB]	[dB/s]	[dB]	[dB]	
100	48	51.1	32.1	-3.1	8	2.05
125	46	50.7	22.2	-4.7	6	2.70
160	47	52.4	18.2	-5.4	7	1.48
200	46	52.0	16.0	-6.0	6	1.18
250	44	49.9	17.0	-5.9	4	0.57
315	40	45.5	17.4	-5.5		0.52
400	37	44.3	17.9	-7.3		0.30
500	31	38.5	18.8	-7.5		0.44
630	32	38.9	20.8	-6.9		0.98
800	22	29.1	21.6	-7.1		0.28
1000	24	28.1	23.8	-4.1		0.14
1250	20	24.2	26.5	-4.2		0.24
1600	12	17.0	28.4	-5.0		0.74
2000	12	16.9	32.2	-4.9		0.65
2500	11	15.4	36.9	-4.4		0.57
3150	11	14.8	39.2	-3.8		0.99
4000	11	14.6	45.0	-3.6		1.35
5000	9	11.8	50.6	-2.8		1.03
L _n = Normalized Sound Pressure Level, dB L2 = Receiving Room Level, dB d = Decay Time, dB/second ΔL _n = Uncertainty for 95% Confidence Level						

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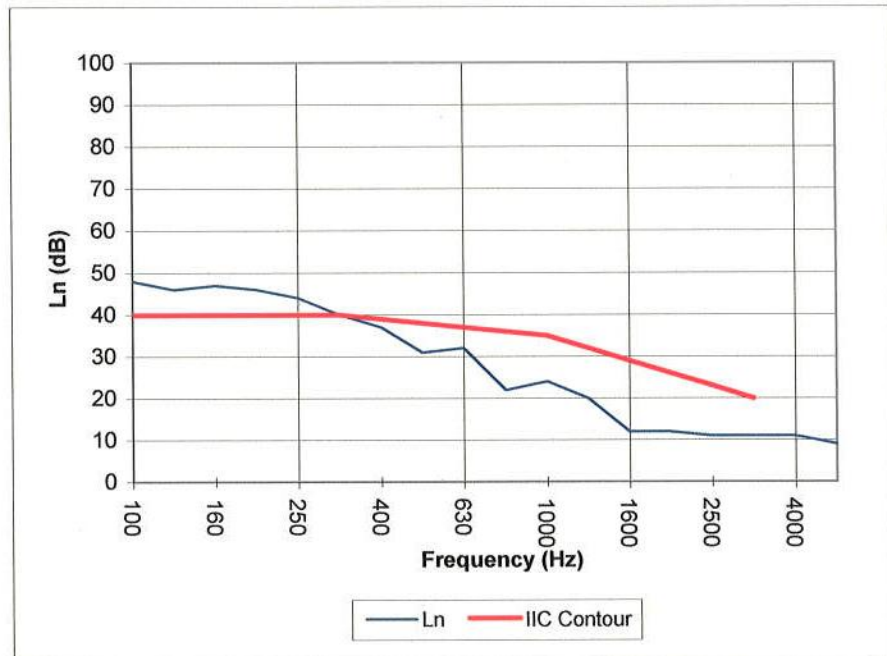
Normalized impact sound pressure level

Test: ASTM E 492 - 09 / ASTM E 989 - 06

Test Report: NGC7011095
 Test Date: 8/10/2011
 Specimen Size [m²]: 17.8

Impact Insulation Class IIC [dB]: 72

Frequency [Hz]	L _n [dB]
100	48
125	46
160	47
200	46
250	44
315	40
400	37
500	31
630	32
800	22
1000	24
1250	20
1600	12
2000	12
2500	11
3150	11
4000	11
5000	9



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

L_n = Normalized Sound Pressure Level, dB

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