



Acoustical Testing Laboratory



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

TEST REPORT

For

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Effectiveness of Floor Coverings in Reducing Impact Sound Transmission Through Concrete Floors Test ASTM E 2179 – 03 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**

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Report Number: NGC 7011094

Assignment Number: G-709

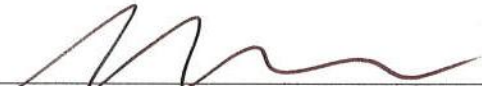
Test Date: 08/08/2011

Report Date: 09/12/2011

Submitted by: _____


Andrew E. Heuer
Test and Quality Engineer

Reviewed by: _____


Robert J. Menchetti
Director

The results reported above apply to specific samples submitted for measurement.
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Report Number: NGC 7011094

Test Method: This test method is in accordance with American Society for Testing and Materials Standard Test Method for Laboratory Measurement of Effectiveness of Floor Coverings in Reducing Impact Sound Transmission Through Concrete Floors – Designation: E 2179 – 03

A 30 second averaging time was used for measurement of sound pressure levels.

Specimen Description: 6 inch (152mm) Concrete Slab 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).

The overall weight of the test assembly is 381.4 kg/m² (78.12 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.

Specimen size: 3657.6mm x 4876.8mm (12 ft. x 16 ft.).

Category II

Specimen 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 through 6.

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Test: ASTM E 2179 - 03			Bare 6" Concrete Slab				Page 3 of 6
Test Report: NGC7011094			Date: 8/8/2011				
Specimen Size [m ²]: 17.8							
Source room			Receiving room				
Rm Temp [°C]: 26.5			Volume [m ³]: 63.9				
Humidity [%]: 64			Rm Temp [°C]: 23.5				
			Humidity [%]: 47				
Frequency [Hz]	L _n [dB]	L2 [dB]	d [dB/s]	Corr. [dB]	u.Dev. [dB]	ΔL _n	
50	62	67.7	15.61	-5.7		1.9	
63	60	63.9	21.96	-3.9		2.0	
80	58	64.5	12.18	-6.5		2.6	
100	59	66.4	11.32	-7.4		3.4	
125	68	73.0	3.51	-5.0		2.8	
160	68	74.4	4.00	-6.4		2.8	
200	68	73.9	3.86	-5.9		1.0	
250	70	74.7	3.05	-4.7		1.0	
315	69	74.2	3.09	-5.2		0.9	
400	70	74.4	2.91	-4.4		0.3	
500	68	72.6	2.77	-4.6		0.3	
630	70	73.7	2.65	-3.7		0.3	
800	70	73.9	2.59	-3.9		0.3	
1000	71	74.9	2.43	-3.9		0.3	
1250	72	75.2	2.17	-3.2		0.1	
1600	73	75.7	2.11	-2.7		0.1	
2000	74	76.6	1.96	-2.6	1	0.3	
2500	75	77.0	1.81	-2.0	5	0.3	
3150	75	76.9	1.63	-1.9	8	0.4	
4000	77	78.6	1.45	-1.6		0.6	
5000	75	76.1	1.25	-1.1		0.7	
<p>L_n = Normalized Sound Pressure Level, dB L2 = Receiving Room Level, dB d = Decay Time, dB/second ΔL_n = Uncertainty for 95% Confidence Level</p>							

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Test: ASTM E 2179 - 03			6" Concrete Slab with Specimen			
Test Report: NGC7011094			Date: 8/8/2011		Page 4 of 6	
Specimen Size [m ²]: 17.8						
Source room			Receiving room			
Rm Temp [°C]: 26.5			Volume [m ³]: 63.9			
Humidity [%]: 64			Rm Temp [°C]: 23.5			
			Humidity [%]: 47			
Frequency [Hz]	L _n [dB]	L2 [dB]	d [dB/s]	Corr. [dB]	u.Dev. [dB]	ΔL _n
50	57	64.0	15.02	-6.0		2.27
63	57	56.8	22.06	-3.8		1.52
80	56	61.3	14.31	-6.3		2.03
100	60	66.6	15.80	-5.6		2.41
125	63	67.9	3.16	-4.9	1	2.05
160	64	71.8	4.03	-5.8	4	2.38
200	68	72.2	3.77	-5.2	4	0.69
250	67	75.4	3.04	-4.4	7	0.72
315	64	74.7	3.18	-4.7	3	0.56
400	64	76.2	2.98	-4.2	5	0.43
500	59	72.1	2.89	-4.1	3	0.31
630	55	69.3	2.66	-4.3		0.42
800	50	66.4	2.64	-4.4		0.20
1000	44	60.4	2.44	-3.4		0.20
1250	38	56.8	2.17	-2.8		0.19
1600	33	52.7	2.03	-2.7		0.12
2000	28	48.6	1.88	-2.6		0.09
2500	27	46.2	1.71	-2.2		0.09
3150	26	41.1	1.55	-2.1		0.12
4000	25	32.9	1.37	-0.9		0.14
5000	24	26.2	1.20	-0.2		0.15
<p>L_n = Normalized Sound Pressure Level, dB L2 = Receiving Room Level, dB d = Decay Time, dB/second ΔL_n = Uncertainty for 95% Confidence Level</p>						

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EFFECTIVENESS OF FLOOR COVERINGS IN REDUCING IMPACT SOUND TRANSMISSION THROUGH CONCRETE FLOORS

Test: ASTM E 2179 - 03

Test Report: NGC7011094

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 Date: 8/8/2011

Increase in Impact Insulation Class $\Delta IIC = 22.0$

Frequency	L_o	L_c	L_d	L_{ref}	$L_{ref,c}$
[Hz]	[dB]	[dB]	[dB]	[dB]	[dB]
100	59	60	-1	67.0	68.0
125	68	63	5	67.5	62.5
160	68	64	4	68.0	64.0
200	68	68	0	68.5	68.5
250	70	67	3	69.0	66.0
315	69	64	5	69.5	64.5
400	70	64	6	70.0	64.0
500	68	59	9	70.5	61.5
630	70	55	15	71.0	56.0
800	70	50	20	71.5	51.5
1000	71	44	27	72.0	45.0
1250	72	38	34	72.0	38.0
1600	73	33	40	72.0	32.0
2000	74	28	46	72.0	26.0
2500	75	27	48	72.0	24.0
3150	75	26	49	72.0	23.0

L_o = Normalized Sound Pressure Level for Bare Standard Concrete Floor, dB
 L_c = Normalized Sound Pressure Level for Covering over Concrete Floor, dB
 L_d = $L_o - L_c$, dB
 L_{ref} = Reference Floor Average Normalized Impact Sound Pressure Level, dB
 $L_{ref,c}$ = $L_{ref} - L_d$, dB

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EFFECTIVENESS OF FLOOR COVERINGS IN REDUCING IMPACT SOUND TRANSMISSION THROUGH CONCRETE FLOORS

Test: ASTM E 2179 - 03

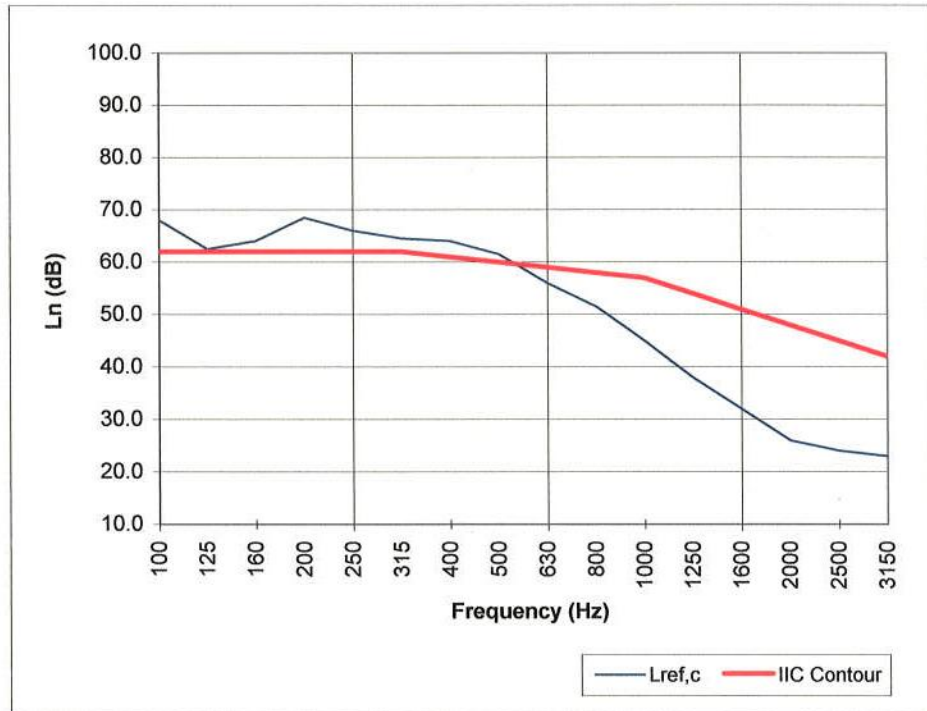
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Test Report: NGC7011094

Date: 8/8/2011

Increase in Impact Insulation Class Δ IIC = 22.0

Frequency [Hz]	Lref,c [dB]
100	68.0
125	62.5
160	64.0
200	68.5
250	66.0
315	64.5
400	64.0
500	61.5
630	56.0
800	51.5
1000	45.0
1250	38.0
1600	32.0
2000	26.0
2500	24.0
3150	23.0



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

Lref,c = Lref - Ld, dB

L_n = Normalized Sound Pressure Level, dB

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