

TEST REPORT

for

Sound Seal

50 H.P. Almgren Drive
Agawam, MA 01001
Michael Keeney / 413-789-1770

Effectiveness of Floor Coverings in Reducing Impact Sound Transmission Through Concrete Floors Test

ASTM E 2179 – 03 (2016)

On

6 Inch (152 mm) Concrete Slab Floor- Ceiling Assembly Overlaid with 3/8" Engineered Wood Flooring over CeraZorb 3mm 1.9# Underlayment

Report Number: NGC 7019158

Assignment Number: G-1649

Test Date: 12/04/2019

Report Approval Date: 12/19/2019

Submitted by:


Anthony J. Rivers
Test Technician

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, NIST or any agency of the Federal Government. This report may not be reproduced except in full, without written approval of the laboratory.

Revision Summary:

Date	SUMMARY
Approval Date: 12/19/2019	Original issue date: 12/19/2019 Original NGCTS report #: NGC 7019158

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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 (2016)

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

Specimen Description: 6 inch concrete slab floor ceiling assembly overlaid with, according to client, 3/8” Engineered Wood Flooring over CeraZorb 3mm 1.9# underlayment.

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

- 1 layer of, 3/8” Engineered Wood flooring. The flooring was floating on the CeraZorb 3mm 1.9# underlayment. Measured thickness: 9.65 mm (0.38 in.). Measured weight: 5.78 kg/m² (1.18 PSF)
- 1 layer of, CeraZorb 3mm 1.9# underlayment. The underlayment was floating on the concrete slab. Measured thickness: 3.05 mm (0.12 in.). Measured weight: 0.10 kg/m² (0.02 PSF)
- 152.4 mm (6 in.) thick reinforced concrete slab, weighing: 366.2 kg/m² (75.00 PSF)

The overall weight of the test assembly is: 372.01 kg/m² (76.20 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 through 7 of the report.

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Test: ASTM E 2179 - 03 (2016)		Bare 6" Concrete Slab				
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Specimen Size [m ²]: 17.8						
Source room			Receiving room			
Rm Temp [°C]: 21			Volume [m ³]: 128			
Humidity [%]: 55			Rm Temp [°C]: 18			
				Humidity [%]: 63		
Frequency	L _n	L2	d	Corr.	u.Dev.	ΔL _n
[Hz]	[dB]	[dB]	[dB/s]	[dB]	[dB]	
50	65	67.9	15.01	-5.7		3.8
63	61	64.0	14.71	-3.9		4.2
80	60	59.6	29.40	0.4		1.90
100	60	60.6	23.74	-0.6		2.35
125	69	71.2	16.39	-2.2		2.06
160	69	71.5	15.34	-2.5		1.13
200	69	72.5	13.88	-3.5		0.74
250	72	75.0	16.00	-3.0		1.36
315	70	72.4	15.58	-2.4		0.69
400	70	72.2	17.16	-2.2		0.58
500	67	69.7	17.23	-2.7		0.35
630	69	71.6	17.41	-2.6		0.40
800	69	70.9	18.25	-1.9		0.37
1000	71	72.8	17.91	-1.8		0.54
1250	72	73.4	19.18	-1.4		0.50
1600	73	74.3	20.43	-1.3		0.62
2000	73	73.7	22.90	-0.7	1	0.64
2500	73	73.8	24.90	-0.8	4	0.78
3150	74	74.2	26.89	-0.2	8	0.87
4000	75	75.3	30.61	-0.3		1.06
5000	75	74.7	34.14	0.3		1.19
L _n = Normalized Sound Pressure Level, dB L2 = Receiving Room Level, dB d = Decay rate dB/second ΔL _n = Uncertainty for 95% Confidence Level						

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Test: ASTM E 2179 - 03 (2016)		6" Concrete Slab with Specimen				
Test Report: NGC7019158		Date: 12/4/2019				
Specimen Size [m ²]: 17.8		Page 5 of 7				
Source room			Receiving room			
Rm Temp [°C]: 21			Volume [m ³]: 128			
Humidity [%]: 55			Rm Temp [°C]: 18			
			Humidity [%]: 63			
Frequency	L _n	L2	d	Corr.	u.Dev.	ΔL _n
[Hz]	[dB]	[dB]	[dB/s]	[dB]	[dB]	
50	59	62.4	14.2	-3.4		3.90
63	55	58.6	13.8	-3.6		3.70
80	56	56.7	23.46	-0.7		1.79
100	59	59.7	22.86	-0.7		1.18
125	69	70.9	18.88	-1.9	8	2.29
160	66	68.8	14.70	-2.8	5	1.59
200	66	69.6	14.35	-3.6	5	0.52
250	68	70.9	15.94	-2.9	7	1.48
315	63	66.2	15.43	-3.2	2	0.53
400	63	64.8	17.34	-1.8	3	0.50
500	57	59.3	18.16	-2.3		0.43
630	53	54.8	17.77	-1.8		0.40
800	46	48.0	18.90	-2.0		0.48
1000	42	44.2	18.67	-2.2		0.63
1250	41	42.5	19.61	-1.5		0.46
1600	37	38.1	21.26	-1.1		0.70
2000	31	31.7	23.41	-0.7		0.65
2500	27	28.0	25.60	-1.0		0.72
3150	24	23.9	28.19	0.1		0.70
4000	21	20.6	32.70	0.4		0.77
5000	17	17.1	37.26	-0.1		0.85
L _n = Normalized Sound Pressure Level, dB L2 = Receiving Room Level, dB d = Decay Rate, dB/second ΔL _n = Uncertainty for 95% Confidence Level						

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

Test: ASTM E 2179 - 03 (2016)

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Increase in Impact Insulation Class $\Delta IIC = 23.0$

Frequency	L_o	L_c	L_d	L_{ref}	$L_{ref,c}$
[Hz]	[dB]	[dB]	[dB]	[dB]	[dB]
100	60	59	1	67.0	66.0
125	69	69	0	67.5	67.5
160	69	66	3	68.0	65.0
200	69	66	3	68.5	65.5
250	72	68	4	69.0	65.0
315	70	63	7	69.5	62.5
400	70	63	7	70.0	63.0
500	67	57	10	70.5	60.5
630	69	53	16	71.0	55.0
800	69	46	23	71.5	48.5
1000	71	42	29	72.0	43.0
1250	72	41	31	72.0	41.0
1600	73	37	36	72.0	36.0
2000	73	31	42	72.0	30.0
2500	73	27	46	72.0	26.0
3150	74	24	50	72.0	22.0

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**

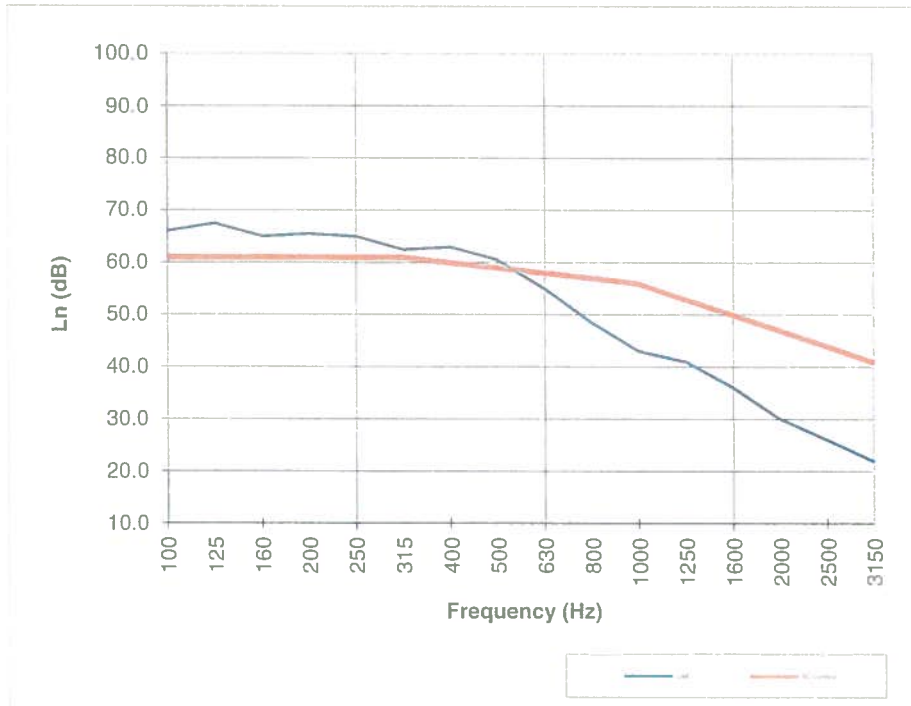
Test: ASTM E 2179 - 03 (2016)

Test Report: NGC7019158

Date: 12/4/2019

Increase in Impact Insulation Class Δ IIC = 23.0

Frequency [Hz]	Lref,c [dB]
100	66.0
125	67.5
160	65.0
200	65.5
250	65.0
315	62.5
400	63.0
500	60.5
630	55.0
800	48.5
1000	43.0
1250	41.0
1600	36.0
2000	30.0
2500	26.0
3150	22.0



* 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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