

TEST REPORT

for

Sound Seal

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

ASTM E 2179 – 03 (2016)

On

8 Inch (203 mm) Concrete Slab Floor- Ceiling Assembly Overlaid with 3/8" Engineered Wood Flooring over CeraZorb 5mm 1.9# Underlayment

Report Number: NGC 7019162

Assignment Number: G-1649

Test Date: 12/09/2019

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 7019162

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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: 8 inch concrete slab floor ceiling assembly overlaid with, according to client, 3/8” Engineered Wood Flooring over CeraZorb 5mm 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 5mm 1.9# underlayment. Measured thickness: 9.65 mm (0.38 in.). Measured weight: 5.78 kg/m² (1.18 PSF)
- 1 layer of, CeraZorb 5mm 1.9# underlayment. The underlayment was floating on the concrete slab. Measured thickness: 4.83 mm (0.19 in.). Measured weight: 0.10 kg/m² (0.02 PSF)
- 203.2 mm (8 in.) thick reinforced concrete slab, weighing: 488.2 kg/m² (100.00 PSF)

The overall weight of the test assembly is: 494.06 kg/m² (101.20 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 8" Concrete Slab				
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Specimen Size [m ²]: 17.8						
Source room			Receiving room			
Rm Temp [°C]: 24.5			Volume [m ³]: 127			
Humidity [%]: 60			Rm Temp [°C]: 23.5			
			Humidity [%]: 49			
Frequency	L _n	L2	d	Corr.	u.Dev.	ΔL _n
[Hz]	[dB]	[dB]	[dB/s]	[dB]	[dB]	
50	61	65.6	20.89	-4.6		1.4
63	55	59.6	20.08	-4.6		3.2
80	57	66.5	15.39	-5.5		1.8
100	60	64.6	15.84	-5.6		2.6
125	65	65.3	3.01	-4.3		2.8
160	67	71.5	3.90	-5.5		2.0
200	66	70.8	3.57	-5.8		0.7
250	65	69.8	2.85	-4.8		0.9
315	69	72.1	2.85	-4.1		0.5
400	66	70.3	2.69	-4.3		0.5
500	67	70.6	2.57	-3.6		0.5
630	67	70.0	2.42	-4.0		0.3
800	69	71.2	2.42	-4.2		0.3
1000	69	70.9	2.29	-3.9		0.3
1250	70	72.7	2.02	-2.7		0.2
1600	71	72.9	1.91	-2.9		0.2
2000	73	73.5	1.69	-2.5	1	0.2
2500	74	73.4	1.57	-2.4	4	0.1
3150	74	73.5	1.42	-1.5	8	0.2
4000	74	75.1	1.23	-1.1		0.2
5000	74	73.3	1.08	-0.3		0.3
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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Test: ASTM E 2179 - 03 (2016)		8" Concrete Slab with Specimen				
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Specimen Size [m ²]: 17.8						
Source room			Receiving room			
Rm Temp [°C]: 24.5			Volume [m ³]: 127			
Humidity [%]: 60			Rm Temp [°C]: 23.5			
			Humidity [%]: 49			
Frequency	L _n	L2	d	Corr.	u.Dev.	ΔL _n
[Hz]	[dB]	[dB]	[dB/s]	[dB]	[dB]	
50	56	60.1	11.23	-4.8		4.70
63	58	60.2	16.47	-4.4		4.70
80	55	55.9	25.01	-0.9		1.56
100	58	58.7	26.82	-0.7	1	1.57
125	64	64.9	21.31	-0.9	7	1.42
160	64	66.7	15.21	-2.7	7	0.74
200	62	65.5	13.88	-3.5	5	0.85
250	60	62.8	14.80	-2.8	3	0.88
315	64	66.6	15.84	-2.6	7	0.54
400	58	60.2	16.80	-2.2	2	0.62
500	54	56.0	18.46	-2.0		0.56
630	49	50.6	19.00	-1.6		0.52
800	46	48.0	19.84	-2.0		0.59
1000	44	46.1	19.64	-2.1		0.65
1250	42	43.4	20.60	-1.4		0.39
1600	36	37.1	21.19	-1.1		0.41
2000	29	29.4	23.69	-0.4		0.54
2500	26	26.3	25.55	-0.3		0.66
3150	23	23.7	27.88	-0.7		0.71
4000	18	18.4	31.96	-0.4		0.55
5000	14	15.0	36.05	-1.0		0.69
<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 (2016)

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Increase in Impact Insulation Class Δ IIC = 28.0

Frequency	L_o	L_c	L_d	L_{ref}	$L_{ref,c}$
[Hz]	[dB]	[dB]	[dB]	[dB]	[dB]
100	60	58	2	59	57.0
125	65	64	1	61	60.0
160	67	64	3	66	63.0
200	66	62	4	65	61.0
250	65	60	5	65	60.0
315	69	64	5	68	63.0
400	66	58	8	66	58.0
500	67	54	13	67	54.0
630	67	49	18	66	48.0
800	69	46	23	67	44.0
1000	69	44	25	67	42.0
1250	70	42	28	70	42.0
1600	71	36	35	70	35.0
2000	73	29	44	71	27.0
2500	74	26	48	71	23.0
3150	74	23	51	72	21.0

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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 IMPACT SOUND TRANSMISSION THROUGH CONCRETE FLOORS**

Test: ASTM E 2179 - 03 (2016)

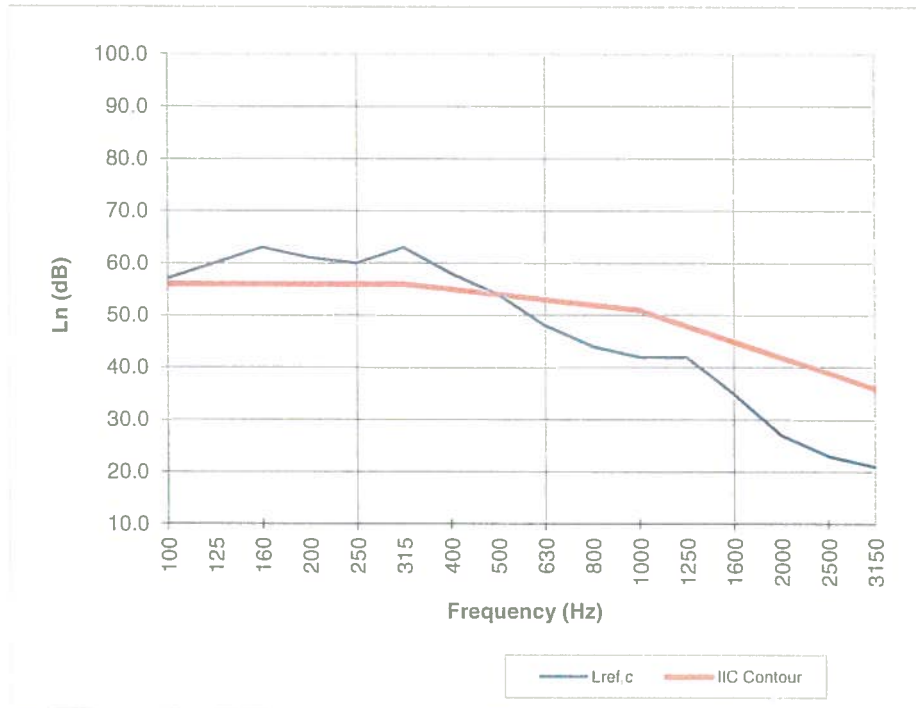
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Test Report: NGC7019162

Date: 12/9/2019

Increase in Impact Insulation Class Δ IIC = 28.0

Frequency [Hz]	Lref,c [dB]
100	57.0
125	60.0
160	63.0
200	61.0
250	60.0
315	63.0
400	58.0
500	54.0
630	48.0
800	44.0
1000	42.0
1250	42.0
1600	35.0
2000	27.0
2500	23.0
3150	21.0



* 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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