

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 10mm 1.9# Underlayment

Report Number: NGC 7019164

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 7019164

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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 10mm 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 10mm 1.9# underlayment. Measured thickness: 9.65 mm (0.38 in.). Measured weight: 5.78 kg/m² (1.18 PSF)
- 1 layer of, CeraZorb 10mm 1.9# underlayment. The underlayment was floating on the concrete slab. Measured thickness: 10.41 mm (0.41 in.). Measured weight: 0.20 kg/m² (0.04 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: 494.16 kg/m² (101.22 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
<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 (2016)				8" Concrete Slab with Specimen		
Test Report: NGC7019164				Date: 12/9/2019		
Specimen Size [m ²]: 17.8				Page 5 of 7		
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	54	58.2	10.90	-4.8		4.40
63	54	59.3	17.46	-4.4		4.40
80	55	55.3	28.28	-0.3		1.51
100	56	57.0	24.42	-1.0		1.72
125	62	63.7	20.62	-1.7	6	1.35
160	64	66.2	16.05	-2.2	8	1.15
200	61	64.4	14.23	-3.4	5	1.02
250	58	61.0	15.45	-3.0	2	0.68
315	61	64.2	15.44	-3.2	5	0.72
400	54	56.6	17.49	-2.6		0.73
500	49	51.2	18.77	-2.2		0.61
630	44	46.2	19.24	-2.2		0.59
800	41	42.9	20.09	-1.9		0.71
1000	41	43.0	19.78	-2.0		0.72
1250	36	37.5	20.44	-1.5		0.37
1600	30	31.6	21.28	-1.6		0.45
2000	26	26.7	23.61	-0.7		0.39
2500	23	23.9	25.65	-0.9		0.57
3150	21	21.7	28.00	-0.7		0.63
4000	19	19.0	32.16	0.0		0.65
5000	14	14.9	36.33	-0.9		0.76
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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**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 = 29.0

Frequency	L_o	L_c	L_d	L_{ref}	$L_{ref,c}$
[Hz]	[dB]	[dB]	[dB]	[dB]	[dB]
100	60	56	4	59	55.0
125	65	62	3	61	58.0
160	67	64	3	66	63.0
200	66	61	5	65	60.0
250	65	58	7	65	58.0
315	69	61	8	68	60.0
400	66	54	12	66	54.0
500	67	49	18	67	49.0
630	67	44	23	66	43.0
800	69	41	28	67	39.0
1000	69	41	28	67	39.0
1250	70	36	34	70	36.0
1600	71	30	41	70	29.0
2000	73	26	47	71	24.0
2500	74	23	51	71	20.0
3150	74	21	53	72	19.0

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)

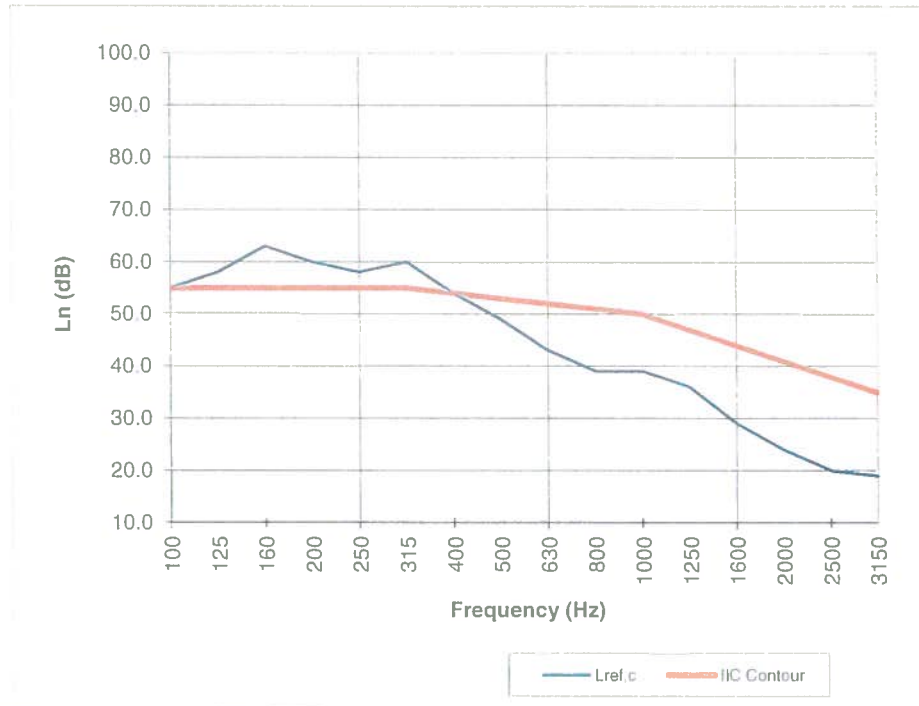
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Test Report: NGC7019164

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Increase in Impact Insulation Class Δ IIC = 29.0

Frequency [Hz]	Lref,c [dB]
100	55.0
125	58.0
160	63.0
200	60.0
250	58.0
315	60.0
400	54.0
500	49.0
630	43.0
800	39.0
1000	39.0
1250	36.0
1600	29.0
2000	24.0
2500	20.0
3150	19.0



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

L_{ref,c} = L_{ref} - L_d, dB

L_n = Normalized Sound Pressure Level, dB

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