

TEST REPORT

for

Sound Seal
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Agawam, MA 01001
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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 10mm 1.9# Underlayment**

Report Number: NGC 7019154

Assignment Number: G-1649

Test Date: 12/04/2019

Report Approval Date: 12/19/2019

Submitted by:


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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 7019154

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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 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)
- 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: 372.11 kg/m² (76.22 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 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
<p>L_n = Normalized Sound Pressure Level, dB L2 = Receiving Room Level, dB d = Decay rate dB/second ΔL_n = Uncertainty for 95% Confidence Level</p>						

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Test: ASTM E 2179 - 03 (2016)		6" Concrete Slab with Specimen				
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Specimen Size [m ²]: 17.8						
Source room			Receiving room			
Rm Temp [°C]: 21		Volume [m ³]: 128		Rm Temp [°C]: 18		
Humidity [%]: 55		Humidity [%]: 63				
Frequency	L _n	L ₂	d	Corr.	u.Dev.	ΔL _n
[Hz]	[dB]	[dB]	[dB/s]	[dB]	[dB]	
50	59	61.9	14.2	-2.9		3.90
63	57	59.9	14.4	-2.9		3.80
80	56	56.7	23.09	-0.7		1.69
100	59	60.1	21.16	-1.1		1.27
125	69	71.4	17.67	-2.4	8	2.33
160	66	68.8	14.96	-2.8	5	1.65
200	67	70.0	14.63	-3.0	6	0.57
250	68	71.0	15.57	-3.0	7	1.53
315	63	66.0	15.21	-3.0	2	0.57
400	62	63.9	16.98	-1.9	2	0.58
500	55	56.7	17.75	-1.7		0.45
630	48	50.2	17.73	-2.2		0.53
800	44	45.8	18.46	-1.8		0.60
1000	40	41.6	18.28	-1.6		0.70
1250	36	38.1	19.47	-2.1		0.56
1600	31	32.9	21.12	-1.9		0.67
2000	26	27.0	23.26	-1.0		0.67
2500	25	25.2	25.35	-0.2		1.03
3150	22	22.0	27.85	0.0		0.84
4000	20	19.8	32.88	0.2		0.84
5000	16	16.1	37.31	-0.1		0.91
L _n = Normalized Sound Pressure Level, dB L ₂ = 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	67	2	68.5	66.5
250	72	68	4	69.0	65.0
315	70	63	7	69.5	62.5
400	70	62	8	70.0	62.0
500	67	55	12	70.5	58.5
630	69	48	21	71.0	50.0
800	69	44	25	71.5	46.5
1000	71	40	31	72.0	41.0
1250	72	36	36	72.0	36.0
1600	73	31	42	72.0	30.0
2000	73	26	47	72.0	25.0
2500	73	25	48	72.0	24.0
3150	74	22	52	72.0	20.0

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)

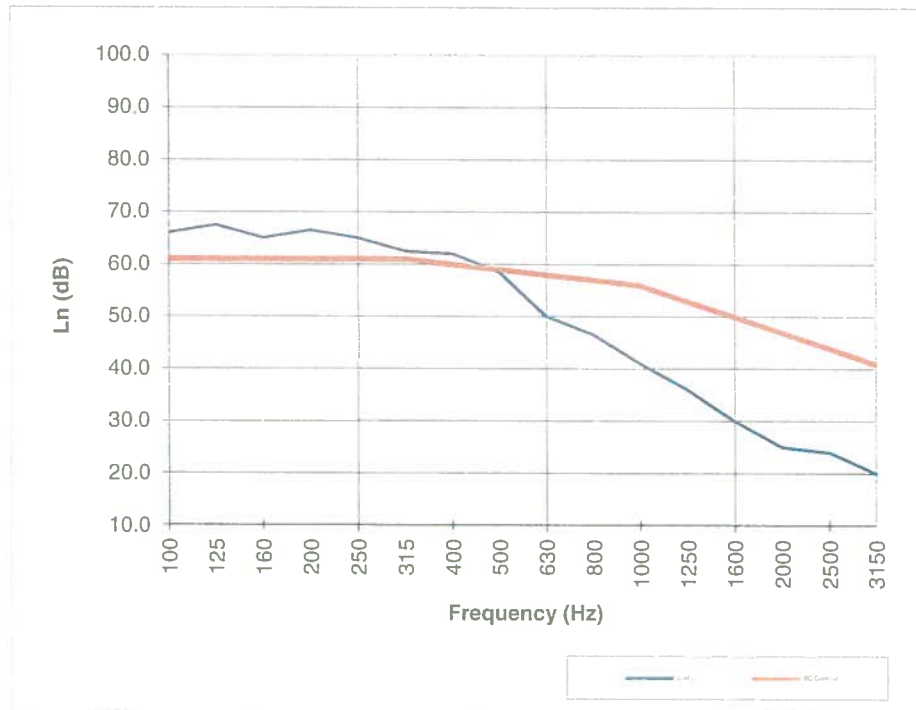
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Test Report: NGC7019154

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	66.5
250	65.0
315	62.5
400	62.0
500	58.5
630	50.0
800	46.5
1000	41.0
1250	36.0
1600	30.0
2000	25.0
2500	24.0
3150	20.0



* 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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