

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 3mm 1.9# Underlayment

Report Number: NGC 7019160

Assignment Number: G-1649

Test Date: 12/06/2019

Report Approval Date: 12/19/2019

Submitted by: _____

Anthony I. 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 7019160

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Report Number: NGC 7019160

Page 3 of 7

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 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)
- 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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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				
Test Report: NGC7019160		Date: 12/6/2019				
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	55	59.1	11.30	-4.8		4.60
63	57	59.6	16.03	-4.4		4.70
80	54	54.7	24.53	-0.7		1.51
100	59	58.9	26.93	0.1	2	1.48
125	62	63.6	21.36	-1.6	5	0.84
160	65	67.7	15.02	-2.7	8	1.05
200	62	65.3	13.89	-3.3	5	0.83
250	60	63.1	15.06	-3.1	3	0.84
315	64	66.4	15.43	-2.4	7	0.69
400	57	59.7	16.94	-2.7	1	0.63
500	54	56.4	18.58	-2.4		0.59
630	50	52.1	19.18	-2.1		0.51
800	47	48.2	20.07	-1.2		0.61
1000	46	47.2	19.88	-1.2		0.71
1250	42	43.6	20.66	-1.6		0.40
1600	39	40.0	21.48	-1.0		0.50
2000	33	33.8	23.56	-0.8		0.54
2500	29	29.6	25.70	-0.6		0.70
3150	24	24.4	28.17	-0.4		0.79
4000	20	19.8	32.18	0.2		0.73
5000	15	15.5	36.50	-0.5		0.81
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)

Test Report: NGC7019160

Page 6 of 7
 Date: 12/6/2019

Increase in Impact Insulation Class $\Delta IIC = 28.0$

Frequency	L_o	L_c	L_d	L_{ref}	$L_{ref,c}$
[Hz]	[dB]	[dB]	[dB]	[dB]	[dB]
100	60	59	1	59	58.0
125	65	62	3	61	58.0
160	67	65	2	66	64.0
200	66	62	4	65	61.0
250	65	60	5	65	60.0
315	69	64	5	68	63.0
400	66	57	9	66	57.0
500	67	54	13	67	54.0
630	67	50	17	66	49.0
800	69	47	22	67	45.0
1000	69	46	23	67	44.0
1250	70	42	28	70	42.0
1600	71	39	32	70	38.0
2000	73	33	40	71	31.0
2500	74	29	45	71	26.0
3150	74	24	50	72	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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Test: ASTM E 2179 - 03 (2016)

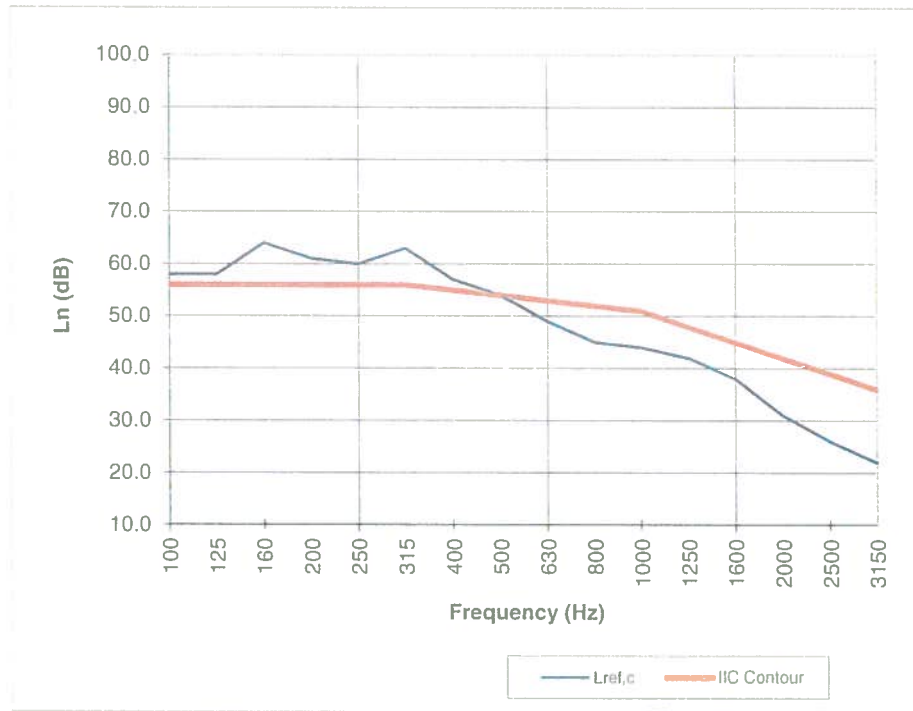
Page 7 of 7

Test Report: NGC7019160

Date: 12/6/2019

Increase in Impact Insulation Class Δ IIC = 28.0

Frequency [Hz]	Lref,c [dB]
100	58.0
125	58.0
160	64.0
200	61.0
250	60.0
315	63.0
400	57.0
500	54.0
630	49.0
800	45.0
1000	44.0
1250	42.0
1600	38.0
2000	31.0
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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