

Acoustical Testing Laboratory



Accredited by the National Voluntary
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under Lab Code 200291

TEST REPORT

For

LATICRETE International, Inc.

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Bethany, CT 06524
Jay B. Conrod / 203-393-4600

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

ASTM E 2179 – 03 (2009)

On

Unglazed Porcelain Tile Using LATICRETE® SpectraLOCK® PRO Premium Grout over LATICRETE® 125 Sound and Crack Adhesive on 6 Inch (152mm) Concrete Slab

Page 1 of 6

Report Number: NGC 7012160

Assignment Number: G-864

Test Date: 12/10/2012

Report Date: 12/11/2012

Submitted by: _____

Andrew E. Heuer
Senior Test Engineer

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 or any agent of the U.S. Government. This report may not be reproduced except in full, without written approval of the laboratory.



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Report Number: NGC 7012160

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 (2009)

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

Specimen Description: 6 inch (152.4mm) concrete slab floor-ceiling assembly overlaid with, according to client, unglazed porcelain tile using LATICRETE® SpectraLOCK® PRO Premium Grout over LATICRETE® 125 Sound and Crack Adhesive applied with 1/2 in. x 1/2 in. square notch trowel.

The test specimen was a floor-ceiling assembly consisting of the following:

- 298.5 mm x 298.5 mm x 23.81 mm (11 3/4 in. x 11 3/4 in. x 5/16 in.) Unglazed porcelain tile installed using LATICRETE® 125 Sound and Crack Adhesive applied with a 12.7 mm x 12.7 mm (1/2 in. x 1/2 in.) square notch trowel and LATICRETE® SpectraLOCK® PRO Premium Grout. Tile, adhesive and grout were installed meeting ANSI Specification A 118.13. Sample weight was 28.0 kg/m² (5.73 PSF).
- 6 inch (152.4mm) thick reinforced concrete slab 366.1 kg/m² (75.0 PSF).

The overall weight of the test assembly is 394.1 kg/m² (80.73 PSF).

The perimeter of the concrete slab was sealed with rubber gasketing and a sand filled trough. The test assembly was structurally isolated from the receiving room.

Specimen size: 3657.6mm x 4876.8mm (12 ft x 16 ft.)
Category II Specimen size: 3657.6mm x 4876.8mm (12 ft x 16 ft.)

Conditioning: Concrete slab cured for a minimum of 28 days. Tile, mortar and grout cured for seven days.

Test Results: The results of the tests are given on pages 3 through 6.

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Acoustical Testing Laboratory

Test: ASTM E 2179 - 03 (2009)				Bare 6" Concrete Slab			Page 3 of 6
Test Report: NGC7012159				Date: 12/10/2012			
Specimen Size [m²]: 17.8							
Source room				Receiving room			
Rm Temp [°C]: 16				Volume [m³]: 63.9			
Humidity [%]: 57				Rm Temp [°C]: 17			
				Humidity [%]: 65			
Frequency	L _n	L2	d	Corr.	u.Dev.	ΔL _n	
[Hz]	[dB]	[dB]	[dB/s]	[dB]	[dB]		
50	62	67.7	15.61	-5.7		1.9	
63	60	63.9	21.96	-3.9		2.0	
80	58	64.5	12.18	-6.5		2.6	
100	59	66.4	11.32	-7.4		3.4	
125	68	73.0	3.51	-5.0		2.8	
160	68	74.4	4.00	-6.4		2.8	
200	68	73.9	3.86	-5.9		1.0	
250	70	74.7	3.05	-4.7		1.0	
315	69	74.2	3.09	-5.2		0.9	
400	70	74.4	2.91	-4.4		0.3	
500	68	72.6	2.77	-4.6		0.3	
630	70	73.7	2.65	-3.7		0.3	
800	70	73.9	2.59	-3.9		0.3	
1000	71	74.9	2.43	-3.9		0.3	
1250	72	75.2	2.17	-3.2		0.1	
1600	73	75.7	2.11	-2.7		0.1	
2000	74	76.6	1.96	-2.6	1	0.3	
2500	75	77.0	1.81	-2.0	5	0.3	
3150	75	76.9	1.63	-1.9	8	0.4	
4000	77	78.6	1.45	-1.6		0.6	
5000	75	76.1	1.25	-1.1		0.7	
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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Acoustical Testing Laboratory

Test: ASTM E 2179 - 03 (2009)				6" Concrete Slab with Specimen		
Test Report: NGC7012159				Date: 12/10/2012		
Specimen Size [m²]: 17.8				Page 4 of 6		
Source room				Receiving room		
Rm Temp [°C]: 16				Volume [m³]: 63.9		
Humidity [%]: 57				Rm Temp [°C]: 17		
				Humidity [%]: 65		
Frequency	L _n	L ₂	d	Corr.	u.Dev.	ΔL _n
[Hz]	[dB]	[dB]	[dB/s]	[dB]	[dB]	
50	59	64.0	15.02	-6.0		2.27
63	53	56.8	22.06	-3.8		1.52
80	57	61.3	14.31	-6.3		2.03
100	58	66.6	15.80	-5.6		2.41
125	64	67.9	3.16	-4.9	1	2.05
160	66	71.8	4.03	-5.8	4	2.38
200	65	72.2	3.77	-5.2	4	0.69
250	69	75.4	3.04	-4.4	7	0.72
315	67	74.7	3.18	-4.7	3	0.56
400	68	76.2	2.98	-4.2	5	0.43
500	68	72.1	2.89	-4.1	3	0.31
630	69	69.3	2.66	-4.3		0.42
800	65	66.4	2.64	-4.4		0.20
1000	62	60.4	2.44	-3.4		0.20
1250	61	56.8	2.17	-2.8		0.19
1600	59	52.7	2.03	-2.7		0.12
2000	57	48.6	1.88	-2.6		0.09
2500	55	46.2	1.71	-2.2		0.09
3150	53	41.1	1.55	-2.1		0.12
4000	52	32.9	1.37	-0.9		0.14
5000	48	26.2	1.20	-0.2		0.15
L _n = Normalized Sound Pressure Level, dB L ₂ = 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 (2009)

Test Report: NGC7012159

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 Date: 12/10/2012

Increase in Impact Insulation Class $\Delta IIC = 17.0$

Frequency	L_o	L_c	L_d	L_{ref}	$L_{ref,c}$
[Hz]	[dB]	[dB]	[dB]	[dB]	[dB]
100	59	58	1	67.0	66.0
125	68	64	4	67.5	63.5
160	68	66	2	68.0	66.0
200	68	65	3	68.5	65.5
250	70	69	1	69.0	68.0
315	69	67	2	69.5	67.5
400	70	68	2	70.0	68.0
500	68	68	0	70.5	70.5
630	70	69	1	71.0	70.0
800	70	65	5	71.5	66.5
1000	71	62	9	72.0	63.0
1250	72	61	11	72.0	61.0
1600	73	59	14	72.0	58.0
2000	74	57	17	72.0	55.0
2500	75	55	20	72.0	52.0
3150	75	53	22	72.0	50.0

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 (2009)

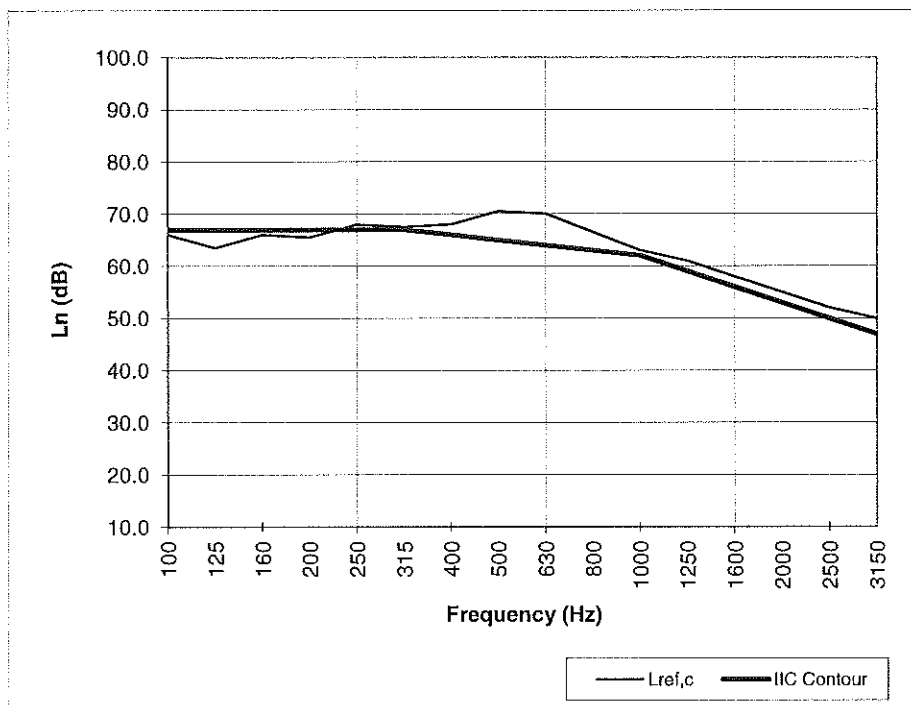
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Test Report: NGC7012159

Date: 12/10/2012

Increase in Impact Insulation Class $\Delta IIC = 17.0$

Frequency [Hz]	Lref,c [dB]
100	66.0
125	63.5
160	66.0
200	65.5
250	68.0
315	67.5
400	68.0
500	70.5
630	70.0
800	66.5
1000	63.0
1250	61.0
1600	58.0
2000	55.0
2500	52.0
3150	50.0



* 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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