



Acoustical Testing Laboratory



Accredited by the National Voluntary Laboratory Accreditation Program for the specific scope of accreditation under Lab Code 200291

TEST REPORT

For

LATICRETE International, Inc.
One Laticrete Park North
Bethany, CT 06524
Jay B. Conrod / 800-243-4788

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

ASTM E 2179 - 03

On

Glazed Ceramic Tile Using
LATICRETE® SpectraLOCK® PRO Grout over
LATICRETE® 125 Sound and Crack Adhesive
Applied with 1/2 In. x 1/2 In. x 1/2 In. Sq. Notch Trowel on
6 Inch (152mm) Concrete Slab

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Report Number: NGC 7009138

Assignment Number: G-551

Test Date: 12/15/2009

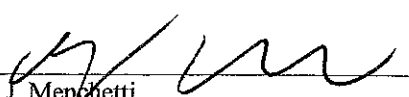
Report Date: 12/24/2009

Submitted by:



Craig G. Cooper
Test Engineer

Reviewed by:



Robert J. Menchetti
Director of Laboratory Facilities
& Testing Services

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Report Number: NGC 7009138

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

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, glazed ceramic tile using LATICRETE® SpectraLOCK® PRO Grout over LATICRETE® 125 Sound and Crack Adhesive applied with 1/2 in. x 1/2 in. x 1/2 in. sq. notch trowel.

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

- 298.5mm x 298.5mm x 7.5mm (11 3/4 in. x 11 3/4 in. x .295 in.) Platinum Ceramic glazed ceramic tile installed using LATICRETE® 125 Sound and Crack Adhesive applied with a 12.7mm x 12.7mm x 12.7mm (1/2 in. x 1/2 in. x 1/2 in.) sq. notch trowel and LATICRETE® SpectraLOCK® PRO Grout. Adhesive mixture was 3 quarts of water per bag of adhesive. Tiles were back buttered. Estimated tile, adhesive, and grout weight was 17.6 kg/m² (3.6 PSF).
- 6 inch (152.4mm) thick reinforced concrete slab 366.1 kg/m² (75.0 PSF).

The overall weight of the test assembly is 383.7 kg/m² (78.6 PSF).

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

Specimen size: 3658mm x 4877mm (12 ft x 16 ft.)
Category II Specimen size: 3658mm x 4877mm (12 ft x 16 ft.)

Conditioning: Concrete slab cured for a minimum of 28 days. Adhesive cured for seven days.

Test Results: The results of the tests are given on pages 3 and 4.

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Test: ASTM E 2179 - 03		Bare 6" Concrete Slab					Page 3 of 6
Test Report: NGC7009138		Date: 12/15/2009					
Specimen Size [m ²]: 17.8							
Source room			Receiving room				
Rm Temp [°C]: 17.5			Volume [m ³]: 63.9				
Humidity [%]: 41			Rm Temp [°C]: 17				
			Humidity [%]: 66				
Frequency	Ln	L2	d	Corr.	u.Dev.	ΔLv	
[Hz]	[dB]	[dB]	[dB/s]	[dB]	[dB]		
50	60	32.9	12.10	27.1	--	2.3	
63	57	32.8	18.59	24.2	--	2.5	
80	57	31.7	14.65	25.3	--	2.4	
100	64	33.2	16.05	30.8	--	3.3	
125	66	39.4	15.19	26.6	--	2.3	
160	67	33.1	14.78	33.9	--	2.3	
200	70	29.2	16.94	40.8	--	0.8	
250	71	27.8	18.81	43.2	--	1.0	
315	67	25.8	19.14	41.2	--	0.7	
400	70	37.3	20.75	32.7	--	0.3	
500	68	35.3	20.98	32.7	--	0.4	
630	70	35.7	22.15	34.3	--	0.3	
800	70	27.7	21.92	42.3	--	0.2	
1000	71	21.1	23.86	49.9	--	0.2	
1250	72	18.8	27.15	53.2	--	0.3	
1600	72	18.1	28.66	53.9	--	0.2	
2000	72	17.4	30.85	54.6	--	0.1	
2500	74	18.1	33.71	55.9	4	0.2	
3150	75	16.6	37.83	58.4	8	0.4	
4000	77	13.8	44.09	63.2	--	0.6	
5000	76	11.5	50.03	64.5	--	0.8	
Ln = Normalized Sound Pressure Level, dB L2 = Receiving Room Level, dB d = Decay Time, dB/second DLn = Uncertainty for 95% Confidence Level							

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Test: ASTM E 2179 - 03		6" Concrete Slab with Specimen					Page 4 of 6
Test Report: NGC7009138		Date: 12/15/2009					
Specimen Size [m ²]: 17.8							
Source room			Receiving room				
Rm Temp [°C]: 17.5			Volume [m ³]: 63.9				
Humidity [%]: 41			Rm Temp [°C]: 17				
			Humidity [%]: 66				
Frequency	Ln	L2	d	Corr.	u.Dev.	ΔL _n	
[Hz]	[dB]	[dB]	[dB/s]	[dB]	[dB]		
50	60	66.2	12.54	-6.2		2.60	
63	55	60.3	18.55	-5.3		1.56	
80	55	62.1	12.18	-7.1		1.73	
100	61	67.5	13.13	-6.5		3.78	
125	64	69.0	3.40	-5.0		2.25	
160	67	72.8	4.16	-5.8		2.70	
200	68	73.5	3.89	-5.5		0.92	
250	70	75.2	3.20	-5.2	1	0.76	
315	67	71.5	3.14	-4.5		0.46	
400	68	73.0	3.01	-5.0		0.22	
500	66	70.2	2.84	-4.2		0.48	
630	66	70.2	2.67	-4.2		0.38	
800	65	69.6	2.70	-4.6		0.24	
1000	65	68.7	2.51	-3.7	1	0.30	
1250	65	67.9	2.23	-2.9	4	0.21	
1600	63	66.6	2.14	-3.6	5	0.14	
2000	60	63.3	1.98	-3.3	5	0.22	
2500	58	60.3	1.82	-2.3	6	0.20	
3150	54	56.0	1.63	-2.0	5	0.29	
4000	51	52.8	1.41	-1.8		0.40	
5000	51	51.8	1.24	-0.8		0.49	

Ln = 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

Test Report: NGC7009138

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Date: 12/15/2009

Increase in Impact Insulation Class $\Delta IIC = 15.0$

Frequency	L_o	L_c	L_d	L_{ref}	$L_{ref,c}$
[Hz]	[dB]	[dB]	[dB]	[dB]	[dB]
100	64	61	3	67.0	64.0
125	66	64	2	67.5	65.5
160	67	67	0	68.0	68.0
200	70	68	2	68.5	66.5
250	71	70	1	69.0	68.0
315	67	67	0	69.5	69.5
400	70	68	2	70.0	68.0
500	68	66	2	70.5	68.5
630	70	66	4	71.0	67.0
800	70	65	5	71.5	66.5
1000	71	65	6	72.0	66.0
1250	72	65	7	72.0	65.0
1600	72	63	9	72.0	63.0
2000	72	60	12	72.0	60.0
2500	74	58	16	72.0	56.0
3150	75	54	21	72.0	51.0

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

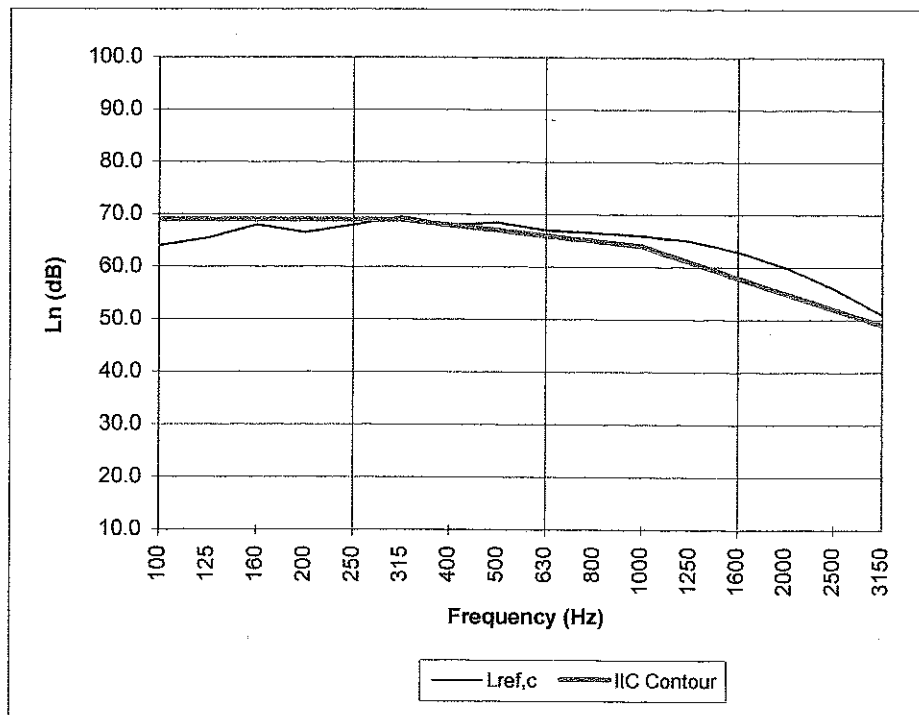
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Increase in Impact Insulation Class Δ IIC = 15.0

Frequency [Hz]	Lref,c [dB]
100	64.0
125	65.5
160	68.0
200	66.5
250	68.0
315	69.5
400	68.0
500	68.5
630	67.0
800	66.5
1000	66.0
1250	65.0
1600	63.0
2000	60.0
2500	56.0
3150	51.0



* 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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