



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
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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 1/4 In. x 3/8 In. Sq. Notch Trowel on
6 Inch (152mm) Concrete Slab

Report Number: NGC 7009144


Page 1 of 6

Assignment Number: G-568

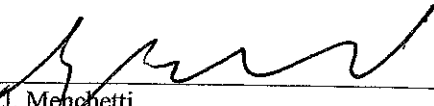
Test Date: 12/31/2009

Report Date: 01/22/2010

Submitted by: _____


Craig G. Cooper
Test Engineer

Reviewed by: _____


Robert J. Menchetti
Director of Laboratory Facilities
& Testing Services

The results reported above apply to specific samples submitted for measurement.

No responsibility is assumed for performance of any other specimen.

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Page 2 of 6

Report Number: NGC 7009144

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 1/4 in. x 3/8 in. square. 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 .303 in.) Platinum Ceramic glazed ceramic tile installed using LATICRETE® 125 Sound and Crack Adhesive applied with a 6.3mm x 9.5mm (1/4 in. x 3/8 in.) sq. notch trowel and LATICRETE® SpectraLOCK® PRO Grout. Adhesive mixture was 3.125 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 through 6.

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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				
Test Report: NGC7009144		Date: 12/31/2009			Page 4 of 6	
Specimen Size [m ²]: 17.8						
Source room			Receiving room			
Rm Temp [°C]: 17			Volume [m ³]: 63.9			
Humidity [%]: 33			Rm Temp [°C]: 16.5			
			Humidity [%]: 66			
Frequency [Hz]	Ln [dB]	L2 [dB]	d [dB/s]	Corr. [dB]	u.Dev. [dB]	ΔL _n
50	58	64.2	15.49	-6.2		1.51
63	58	61.6	23.59	-3.6		1.62
80	56	63.1	11.83	-7.1		2.28
100	61	67.7	13.61	-6.7		4.76
125	65	70.4	3.50	-5.4		2.88
160	67	73.0	3.96	-6.0		2.61
200	66	71.5	3.90	-5.5		1.14
250	69	74.1	3.00	-5.1		0.94
315	67	71.5	3.05	-4.5		0.49
400	68	72.1	2.81	-4.1		0.40
500	67	70.8	2.74	-3.8		0.30
630	67	71.1	2.64	-4.1		0.22
800	66	69.9	2.62	-3.9		0.24
1000	65	68.8	2.43	-3.8		0.33
1250	64	67.3	2.18	-3.3	2	0.25
1600	64	66.8	2.09	-2.8	5	0.14
2000	63	65.5	1.96	-2.5	7	0.20
2500	61	63.7	1.80	-2.7	8	0.30
3150	58	59.7	1.63	-1.7	8	0.43
4000	55	55.9	1.42	-0.9		0.53
5000	51	51.6	1.25	-0.6		0.50
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: NGC7009144

Page 5 of 6
 Date: 12/31/2009

Increase in Impact Insulation Class $\Delta IIC = 14.0$

Frequency [Hz]	L_o [dB]	L_c [dB]	L_d [dB]	L_{ref} [dB]	$L_{ref,c}$ [dB]
100	64	61	3	67.0	64.0
125	66	65	1	67.5	66.5
160	67	67	0	68.0	68.0
200	70	66	4	68.5	64.5
250	71	69	2	69.0	67.0
315	67	67	0	69.5	69.5
400	70	68	2	70.0	68.0
500	68	67	1	70.5	69.5
630	70	67	3	71.0	68.0
800	70	66	4	71.5	67.5
1000	71	65	6	72.0	66.0
1250	72	64	8	72.0	64.0
1600	72	64	8	72.0	64.0
2000	72	63	9	72.0	63.0
2500	74	61	13	72.0	59.0
3150	75	58	17	72.0	55.0

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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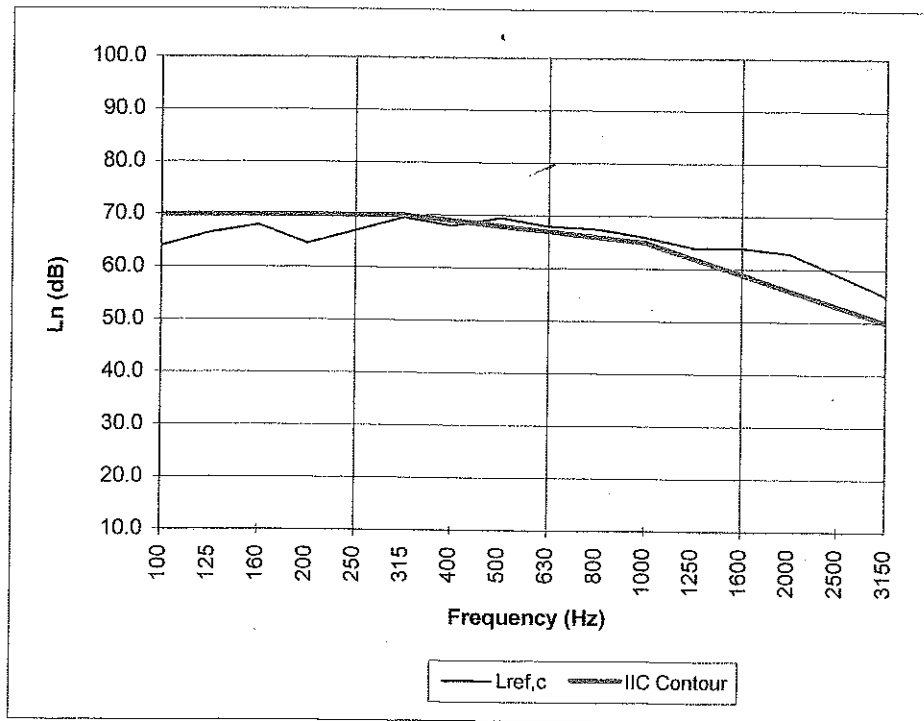
Test: ASTM E 2179 - 03

Test Report: NGC7009144

Date: 12/31/2009 Page 6 of 6

Increase in Impact Insulation Class $\Delta IIC = 14.0$

Frequency [Hz]	Lref,c [dB]
100	64.0
125	66.5
160	68.0
200	64.5
250	67.0
315	69.5
400	68.0
500	69.5
630	68.0
800	67.5
1000	66.0
1250	64.0
1600	64.0
2000	63.0
2500	59.0
3150	55.0



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

$L_{ref,c} = L_{ref} - L_d, \text{ dB}$

$L_n = \text{Normalized Sound Pressure Level, dB}$

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