



# Acoustical Testing Laboratory



Accredited by the National Voluntary  
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under Lab Code 200291

## TEST REPORT

For

Amorim Cork Composites  
26112 110<sup>th</sup> Street P.O. Box 25  
Trevor, Wisconsin 53179  
Larry Lyons / 262-862-2311

### Impact Sound Transmission Test ASTM E 2179 – 03

On

6 Inch (152mm) Concrete Slab Overlaid with  
Quarry Tile Flooring over Two Layers of 5mm Cork / Recycled  
Rubber Blended Underlayment

Page 1 of 6


Report Number: NGC 7008138

Assignment Number: G-441

Test Date: 09/09/2008

Report Date: 10/02/2008

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.  
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Report Number: NGC 7008138

**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 (152mm) Concrete Slab Overlaid with, according to client, quarry tile flooring on two layers of 5mm cork / recycled rubber underlayment.

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

- 152mm x 152mm x 12.7mm (6 in. x 6 in. x ½ in.) unglazed clay quarry tile 27.3 kg/m<sup>2</sup> (5.6 PSF) installed using Mapei® Kerabond™ Premium Dryset latex-modified thin-set mortar mixed with Mapei® Keralastic™ Premium Flexible Mortar Adhesive and latex-modified sanded grout mixtures 5.4 kg/m<sup>2</sup> (1.1 PSF). Mortar was troweled on with a ¼ in. x ¼ in. x 1/4 in. square notched trowel.
- 2 layers of 5.2mm (0.205 in.) Cork / Recycled Rubber blended underlayment. Sample weight was found to be 7.2 kg/m<sup>2</sup> (1.48 PSF). The layers were loose laid on floor and each other. Top joints were taped.
- 152mm (6 in.) thick reinforced concrete slab 366.1 kg/m<sup>2</sup> (75.0 PSF).

The overall weight of the test assembly is 406.1 kg/m<sup>2</sup> (83.18 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.

**Test Floor Size:** 3658mm x 4877mm (12 ft. x 16 ft.).  
**Category II Specimen Size:** 3658mm x 4877mm (12 ft. x 16 ft.).

**Conditioning:** Mortar and grout cured for minimum of 7 days.

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

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Frequency		Ln	L2	T	Corr.	u.Dev.	$\Delta L_n$
[Hz]		[dB]	[dB]	[s]	[dB]	[dB]	
50		60.0	66.5	4.49	-6.5	--	0.418
63		59.0	63.7	3.36	-4.7	--	0.287
80		57.0	64.0	4.65	-7.0	--	0.306
100		62.0	68.1	3.82	-6.1	--	0.552
125		66.0	71.7	3.47	-5.7	--	0.418
160		69.0	75.1	3.93	-6.1	--	0.198
200		70.0	75.4	3.81	-5.4	--	0.187
250		70.0	74.6	3.13	-4.6	--	0.093
315		69.0	73.3	3.09	-4.3	--	0.096
400		70.0	75.0	2.97	-5.0	--	0.069
500		68.0	72.1	2.78	-4.1	--	0.055
630		70.0	74.5	2.62	-4.5	--	0.060
800		70.0	74.2	2.69	-4.2	--	0.051
1000		71.0	74.8	2.52	-3.8	--	0.047
1250		72.0	75.2	2.22	-3.2	--	0.050
1600		72.0	75.5	2.12	-3.5	--	0.052
2000		73.0	75.5	1.96	-2.5	1.0	0.044
2500		74.0	76.0	1.82	-2.0	5.0	0.042
3150		74.0	76.0	1.64	-2.0	8.0	0.032
4000		76.0	77.4	1.42	-1.4	--	0.035
5000		76.0	76.4	1.25	-0.4	--	0.045

$L_n$	= Normalized Sound Pressure Level, dB
L2	= Receiving Room Level, dB
T	= Reverberation Time, seconds
$\Delta L_n$	= Uncertainty for 95% Confidence Level

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Test: ASTM E 2179 - 03		6" Concrete Slab with Specimen				
Test Number: NGC7008138		Date: 9/9/2008			Page 4 of 6	
Size: 17.8 m <sup>2</sup>						
<b>Source room</b>			<b>Receiving room</b>			
Temperature [°C]: 21.8			Volume V = 63.9 m <sup>3</sup>			
Humidity [%]: 60			Temperature [°C]: 22.1			
			Humidity [%]: 52			
Frequency	L <sub>n</sub>	L <sub>2</sub>	T	Corr.	u.Dev.	ΔL <sub>n</sub>
[Hz]	[dB]	[dB]	[s]	[dB]	[dB]	
50	58	63.4	3.89	-5.4	--	0.274
63	57	61.9	3.31	-4.9	--	0.284
80	53	59.3	4.23	-6.3	--	0.346
100	60	65.4	3.67	-5.4	--	0.537
125	65	70.3	3.78	-5.3	3	0.399
160	66	71.9	4.02	-5.9	4	0.166
200	70	76.2	3.94	-6.2	8	0.187
250	68	72.9	2.95	-4.9	6	0.116
315	62	66.8	2.98	-4.8	--	0.093
400	63	67.6	2.95	-4.6	2	0.090
500	57	61.2	2.70	-4.2	--	0.067
630	54	57.9	2.63	-3.9	--	0.055
800	50	53.6	2.63	-3.6	--	0.059
1000	46	49.8	2.45	-3.8	--	0.049
1250	45	47.8	2.16	-2.8	--	0.044
1600	45	48.3	2.05	-3.3	--	0.044
2000	42	44.4	1.85	-2.4	--	0.048
2500	39	40.8	1.69	-1.8	--	0.037
3150	34	35.5	1.52	-1.5	--	0.040
4000	30	30.8	1.33	-0.8	--	0.036
5000	25	25.1	1.15	-0.1	--	0.046
<p>L<sub>n</sub> = Normalized Sound Pressure Level, dB            L<sub>2</sub> = Receiving Room Level, dB            T = Reverberation Time, seconds            ΔL<sub>n</sub> = Uncertainty for 95% Confidence Level</p>						

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## EFFECTIVENESS OF FLOOR COVERINGS IN REDUCING IMPACT SOUND TRANSMISSION THROUGH CONCRETE FLOORS

Test: ASTM E 2179 - 03

Test Number: NGC7008138 Date: 9/9/2008 Page 5 of 6  
 Size: 17.8 m<sup>2</sup>

**Increase in Impact Insulation Class  $\Delta$ IIC = 22.0**

Frequency	L <sub>o</sub>	L <sub>c</sub>	L <sub>d</sub>	L <sub>ref</sub>	L <sub>ref,c</sub>
[Hz]	[dB]	[dB]	[dB]	[dB]	[dB]
100	62.0	60.0	2.0	67.0	65.0
125	66.0	65.0	1.0	67.5	66.5
160	69.0	66.0	3.0	68.0	65.0
200	70.0	70.0	0.0	68.5	68.5
250	70.0	68.0	2.0	69.0	67.0
315	69.0	62.0	7.0	69.5	62.5
400	70.0	63.0	7.0	70.0	63.0
500	68.0	57.0	11.0	70.5	59.5
630	70.0	54.0	16.0	71.0	55.0
800	70.0	50.0	20.0	71.5	51.5
1000	71.0	46.0	25.0	72.0	47.0
1250	72.0	45.0	27.0	72.0	45.0
1600	72.0	45.0	27.0	72.0	45.0
2000	73.0	42.0	31.0	72.0	41.0
2500	74.0	39.0	35.0	72.0	37.0
3150	74	34	40.0	72.0	32.0

L<sub>o</sub> = Normalized Sound Pressure Level for Bare Standard Concrete Floor, dB  
 L<sub>c</sub> = Normalized Sound Pressure Level for Covering over Concrete Floor, dB  
 L<sub>d</sub> = L<sub>o</sub> - L<sub>c</sub>, dB  
 L<sub>ref</sub> = Reference Floor Average Normalized Impact Sound Pressure Level, dB  
 L<sub>ref,c</sub> = L<sub>ref</sub> - L<sub>d</sub>, dB

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## EFFECTIVENESS OF FLOOR COVERINGS IN REDUCING IMPACT SOUND TRANSMISSION THROUGH CONCRETE FLOORS

Test: ASTM E 2179 - 03

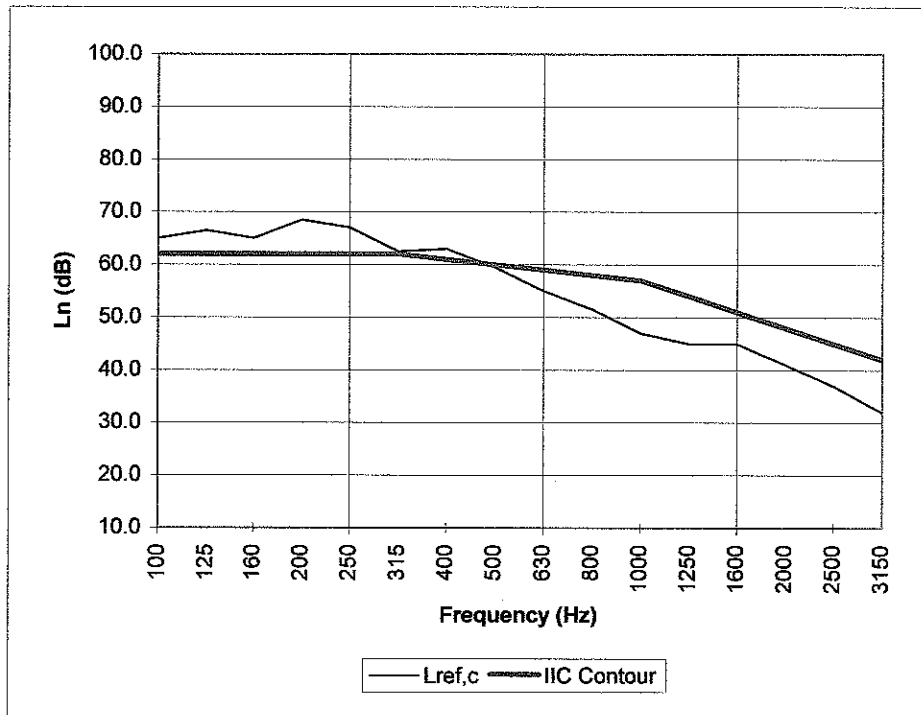
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Test Number: NGC7008138

Date: 9/9/2008

**Increase in Impact Insulation Class  $\Delta IIC = 22.0$**

Frequency [Hz]	Lref,c [dB]
100	65.0
125	66.5
160	65.0
200	68.5
250	67.0
315	62.5
400	63.0
500	59.5
630	55.0
800	51.5
1000	47.0
1250	45.0
1600	45.0
2000	41.0
2500	37.0
3150	32.0



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

Lref,c = Lref - Ld, dB

L<sub>n</sub> = Normalized Sound Pressure Level, dB

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