



# Acoustical Testing Laboratory



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

## TEST REPORT

For

Amorim Industrial Solutions  
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Trevor, Wisconsin 53179  
Larry Lyons / 262-862-2311

### Impact Sound Transmission Test ASTM E 2179 - 03 On

**6 Inch (152mm) Concrete Slab Overlaid with  
6mm AcoustiCORK® PR60 Profiled Underlayment  
and 9/16 inch Glued Down Engineered Wood Flooring**

Report Number: NGC 7007058

Page 1 of 6  
Reissued 08/07/2007

Assignment Number: G-355

Test Date: 04/30/2007

Report Date: 07/26/2007

Submitted by: Craig G. Cooper  
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Test Engineer

Reviewed by: Robert J. Menchetti  
Robert J. Menchetti  
Director

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Page 2 of 6

Report Number: NGC 7007058

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**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; 14.3mm (9/16 in.) Owens Plankfloor Engineered Hardwood Flooring over, AcoustiCORK® PR60 Profiled Underlayment.

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

- 1 layer of 15mm x 102mm x random length (9/16 in. x 4 in. x random length) Engineered Owens Plankfloor “Strip” Flooring 11.9 kg/m<sup>2</sup> (2.44 PSF). Flooring was adhered to underlayment with Mapei 990 Polyurethane Adhesive using 1/8 in. V-notched trowel 1/2 in. center to center.
- 1 layer of 6mm AcoustiCORK® PR60 Profiled Underlayment, observed to be 5.75mm and 2.41mm (0.226 in. and 0.095 in.) thick in 1003mm (39-1/2 in.) wide rolls. Seams duct taped. Installed with the dimpled side down. Sample weight was 0.78 kg/m<sup>2</sup> (0.16 PSF). Underlayment was adhered to poly with Mapei 990 Polyurethane Adhesive using 1/8 in. x 1/8 in. square notched trowel.
- 1 layer 4 mil poly sheeting attached to concrete with double sided tape at seams and Perimeter.
- 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 378.8 kg/m<sup>2</sup> (77.60 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:** Adhesive cured for a minimum 24 hours. Concrete slab cured for a minimum of 28 days.

Test samples were submitted by client and tested as received.

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

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Test: ASTM E 2179 - 03		Bare 6" Concrete Slab					Page 3 of 6
Test Number: NGC7007058		Date: 4/30/2007					
Size: 17.84 m <sup>2</sup>							
<b>Source room</b>			<b>Receiving room</b>				
Temperature [°C]: 19.3			Volume V = 63.9 m <sup>3</sup>				
Humidity [%]: 46			Temperature [°C]: 19.3				
			Humidity [%]: 62				
Frequency	L <sub>n</sub>	L <sub>2</sub>	T	Corr.	u.Dev.	ΔL <sub>n</sub>	
[Hz]	[dB]	[dB]	[s]	[dB]	[dB]		
50	60.0	66.6	5.02	-6.6	--	0.296	
63	59.0	65.1	4.06	-6.1	--	0.249	
80	59.0	65.7	4.95	-6.7	--	0.294	
100	65.0	71.6	4.38	-6.6	--	0.252	
125	67.0	72.6	4.02	-5.6	--	0.196	
160	70.0	76.3	4.22	-6.3	--	0.162	
200	67.0	72.8	4.17	-5.8	--	0.137	
250	71.0	75.7	3.36	-4.7	--	0.149	
315	68.0	73.2	3.20	-5.2	--	0.099	
400	70.0	75.2	3.06	-5.2	--	0.066	
500	68.0	72.3	2.89	-4.3	--	0.082	
630	70.0	74.1	2.70	-4.1	--	0.051	
800	70.0	74.2	2.63	-4.2	--	0.051	
1000	71.0	74.7	2.45	-3.7	--	0.057	
1250	72.0	75.3	2.09	-3.3	--	0.051	
1600	73.0	75.7	1.98	-2.7	--	0.044	
2000	73.0	75.4	1.80	-2.4	--	0.040	
2500	74.0	75.8	1.63	-1.8	4.0	0.038	
3150	75.0	76.1	1.48	-1.1	8.0	0.045	
4000	76.0	77.3	1.27	-1.3	--	0.038	
5000	76.0	76.1	1.16	-0.1	--	0.045	
<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>							

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

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# Acoustical Testing Laboratory



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Test: ASTM E 2179 - 03		6" Concrete Slab with Specimen				
Test Number: NGC7007058		Date: 4/30/2007			Page 4 of 6	
Size: 17.84 m <sup>2</sup>						
<b>Source room</b>			<b>Receiving room</b>			
Temperature [°C]: 19.3			Volume V = 63.9 m <sup>3</sup>			
Humidity [%]: 46			Temperature [°C]: 19.3			
			Humidity [%]: 62			
Frequency	L <sub>n</sub>	L2	T	Corr.	u.Dev.	ΔL <sub>n</sub>
[Hz]	[dB]	[dB]	[s]	[dB]	[dB]	
50	51.0	57.5	4.18	-6.5	--	0.418
63	52.0	56.9	3.40	-4.9	--	0.196
80	51.0	58.1	4.91	-7.1	--	0.423
100	58.0	63.7	3.73	-5.7	--	0.546
125	60.0	65.5	3.70	-5.5	2.0	0.305
160	65.0	70.5	3.95	-5.5	7.0	0.221
200	60.0	65.8	3.83	-5.8	2.0	0.134
250	64.0	68.6	3.08	-4.6	6.0	0.121
315	61.0	65.2	2.95	-4.2	3.0	0.074
400	63.0	66.9	2.76	-3.9	6.0	0.101
500	60.0	64.0	2.60	-4.0	4.0	0.090
630	56.0	59.6	2.44	-3.6	1.0	0.076
800	51.0	54.4	2.39	-3.4	--	0.059
1000	47.0	50.3	2.21	-3.3	--	0.049
1250	42.0	45.2	1.93	-3.2	--	0.048
1600	36.0	38.7	1.76	-2.7	--	0.059
2000	32.0	34.3	1.63	-2.3	--	0.041
2500	30.0	31.9	1.52	-1.9	--	0.042
3150	28.0	29.6	1.35	-1.6	--	0.035
4000	28.0	28.4	1.21	-0.4	--	0.029
5000	27.0	27.1	1.10	-0.1	--	0.044
<p>L<sub>n</sub> = Normalized Sound Pressure Level, dB  L2 = 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

Page 5 of 6

Test Number: NGC7007058

Date: 4/30/2007

Size: 17.84 m<sup>2</sup>

**Increase in Impact Insulation Class  $\Delta$ IIC = 25.0**

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	65.0	58.0	7.0	67.0	60.0
125	67.0	60.0	7.0	67.5	60.5
160	70.0	65.0	5.0	68.0	63.0
200	67.0	60.0	7.0	68.5	61.5
250	71.0	64.0	7.0	69.0	62.0
315	68.0	61.0	7.0	69.5	62.5
400	70.0	63.0	7.0	70.0	63.0
500	68.0	60.0	8.0	70.5	62.5
630	70.0	56.0	14.0	71.0	57.0
800	70.0	51.0	19.0	71.5	52.5
1000	71.0	47.0	24.0	72.0	48.0
1250	72.0	42.0	30.0	72.0	42.0
1600	73.0	36.0	37.0	72.0	35.0
2000	73.0	32.0	41.0	72.0	31.0
2500	74.0	30.0	44.0	72.0	28.0
3150	75.0	28.0	47.0	72.0	25.0

- 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

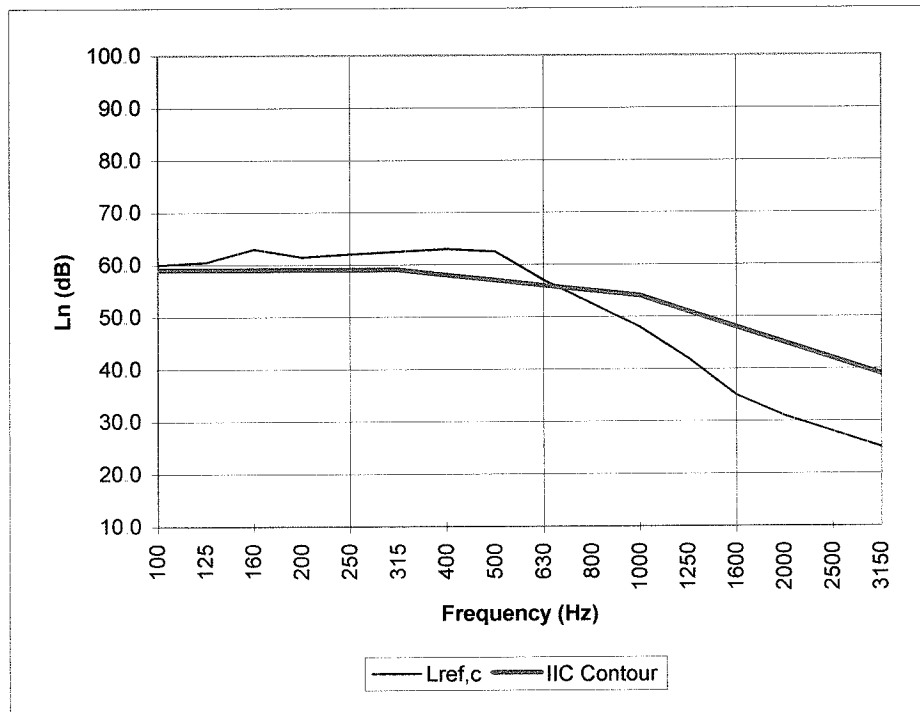
Page 6 of 6

Test Number: NGC7007058

Date: 4/30/2007

**Increase in Impact Insulation Class  $\Delta IIC = 25.0$**

Frequency [Hz]	Lref,c [dB]
100	60.0
125	60.5
160	63.0
200	61.5
250	62.0
315	62.5
400	63.0
500	62.5
630	57.0
800	52.5
1000	48.0
1250	42.0
1600	35.0
2000	31.0
2500	28.0
3150	25.0



\* 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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