



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 Cork Composites
26112 110th 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
Glued Down Engineered Wood Flooring over
Glue Down 5mm Cork / Recycled
Rubber Blended Underlayment

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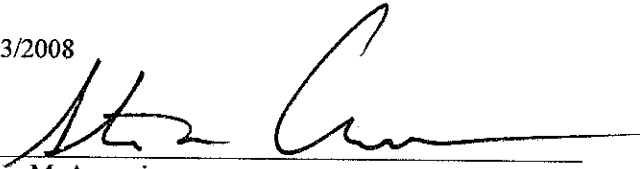
Report Number: NGC 7008140

Assignment Number: G-441

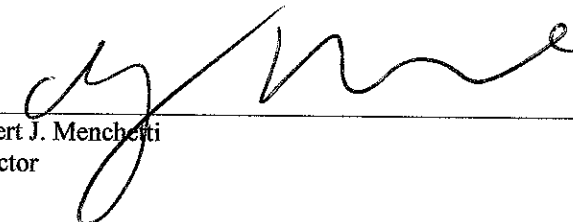
Test Date: 09/11/2008

Report Date: 10/03/2008

Submitted by:


Steven M. Armenia
Test Technician

Reviewed by:


Robert J. Menchetti
Director

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Report Number: NGC 7008140

Test Method: This test method is in accordance with American Society for Testing and Materials Standard Test Method for Laboratory Measurement of Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine - Designation: E 492 – 04 / E 989 - 89.

The uncertainty limits of each tapping machine location met the precision requirements of section 11.3 of ASTM E 492-04.

Specimen Description: 6 inch (152mm) Concrete Slab Overlaid with; Glued down 10mm (0.393 in.) Engineered Hardwood Flooring over, glued down 5mm cork / recycled rubber underlayment.

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

- 1 layer of 10mm x 82.5mm x random length (3/8 in. x 3-1/4 in. x random length) Engineered Wood Flooring 5.76 kg/m² (1.18 PSF). Flooring was adhered to underlayment with Mapei Ultrabond® 980 Polyurethane Adhesive using 1/8 in. V-notched trowel, 0.74 kg/m² (0.15 PSF). Product number RO03R525B – Red Oak.
- 1 layer of 5.2mm (0.205 in.) Cork / Recycled Rubber blended underlayment. Sample weight was found to be 3.6 kg/m² (0.74 PSF). Underlayment was glued to the poly sheeting. Top joints were taped.
- Mapei Ultrabond® 980 Polyurethane Adhesive was used to adhere underlayment to poly sheeting, 1.86 kg/m² (0.38 PSF). A 6.3mm x 6.3mm x 3.2mm (1/4 in. x 1/4 in. x 1/8 in.) square-notch trowel was used.
- 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/m² (75.0 PSF).

The overall weight of the test assembly is 378.1 kg/m² (77.45 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.)

Conditioning: Adhesive cured for a minimum 24 hours. Concrete slab cured for a minimum of 28 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				
Test Number: NGC7008140		Date: 9/11/2008			Page 3 of 6	
Size: 17.8 m ²						
Source room			Receiving room			
Temperature [°C]: 21.2			Volume V = 63.9 m ³			
Humidity [%]: 46			Temperature [°C]: 21.9			
			Humidity [%]: 50			
Frequency	Ln	L2	T	Corr.	u.Dev.	ΔL _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
 ΔL_n = Uncertainty for 95% Confidence Level

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Test: ASTM E 2179 - 03		6" Concrete Slab with Specimen				
Test Number: NGC7008140		Date: 9/11/2008			Page 4 of 6	
Size: 17.8 m ²						
Source room			Receiving room			
Temperature [°C]: 21.2			Volume V = 63.9 m ³			
Humidity [%]: 46			Temperature [°C]: 21.9			
			Humidity [%]: 50			
Frequency	L _n	L ₂	T	Corr.	u.Dev.	ΔL _n
[Hz]	[dB]	[dB]	[s]	[dB]	[dB]	
50	58	63.8	3.89	-5.8	--	0.274
63	56	61.1	3.31	-5.1	--	0.284
80	56	61.8	4.23	-5.8	--	0.346
100	62	67.2	3.67	-5.2	--	0.537
125	64	70.0	3.78	-6.0	2	0.399
160	67	72.5	4.02	-5.5	5	0.166
200	67	72.4	3.94	-5.4	5	0.187
250	68	72.5	2.95	-4.5	6	0.116
315	64	69.1	2.98	-5.1	2	0.093
400	65	69.6	2.95	-4.6	4	0.090
500	61	65.2	2.70	-4.2	1	0.067
630	58	62.1	2.63	-4.1	--	0.055
800	53	56.8	2.63	-3.8	--	0.059
1000	47	51.0	2.45	-4.0	--	0.049
1250	41	44.6	2.16	-3.6	--	0.044
1600	36	38.6	2.05	-2.6	--	0.044
2000	30	32.9	1.85	-2.9	--	0.048
2500	25	26.9	1.69	-1.9	--	0.037
3150	24	26.2	1.52	-2.2	--	0.040
4000	24	25.6	1.33	-1.6	--	0.036
5000	22	22.5	1.15	-0.5	--	0.046

L_n = Normalized Sound Pressure Level, dB
 L₂ = Receiving Room Level, dB
 T = Reverberation Time, seconds
 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 Number: NGC7008140
 Size: 17.8 m²

Date: 9/11/2008

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Increase in Impact Insulation Class Δ IIC = 21.0

Frequency	L _o	L _c	L _d	L _{ref}	L _{ref,c}
[Hz]	[dB]	[dB]	[dB]	[dB]	[dB]
100	62.0	62.0	0.0	67.0	67.0
125	66.0	64.0	2.0	67.5	65.5
160	69.0	67.0	2.0	68.0	66.0
200	70.0	67.0	3.0	68.5	65.5
250	70.0	68.0	2.0	69.0	67.0
315	69.0	64.0	5.0	69.5	64.5
400	70.0	65.0	5.0	70.0	65.0
500	68.0	61.0	7.0	70.5	63.5
630	70.0	58.0	12.0	71.0	59.0
800	70.0	53.0	17.0	71.5	54.5
1000	71.0	47.0	24.0	72.0	48.0
1250	72.0	41.0	31.0	72.0	41.0
1600	72.0	36.0	36.0	72.0	36.0
2000	73.0	30.0	43.0	72.0	29.0
2500	74.0	25.0	49.0	72.0	23.0
3150	74	24	50.0	72.0	22.0

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

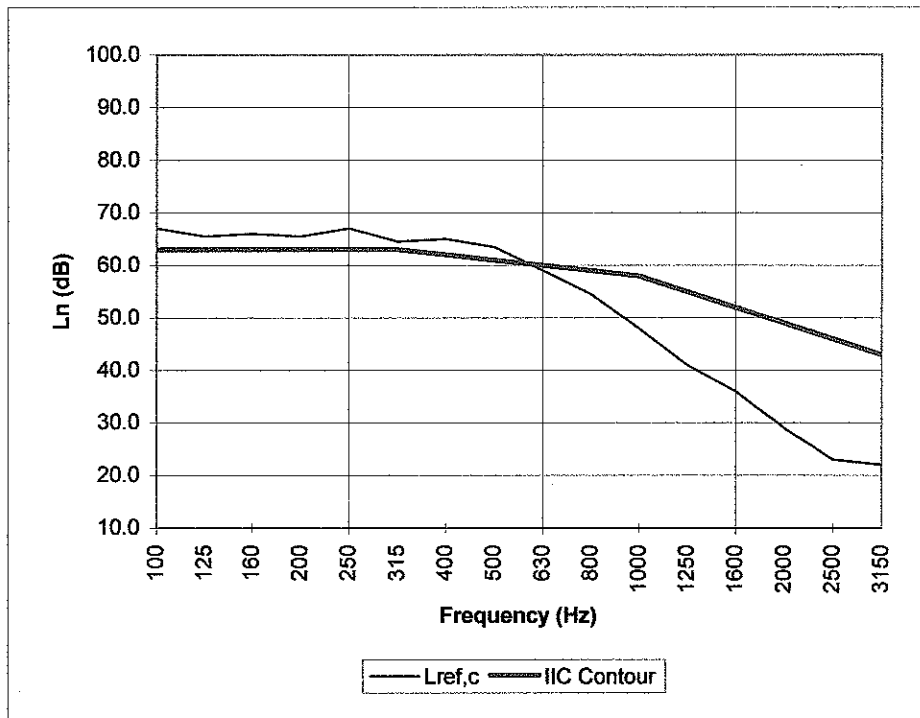
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Test Number: NGC7008140

Date: 9/11/2008

Increase in Impact Insulation Class $\Delta IIC = 21.0$

Frequency [Hz]	Lref,c [dB]
100	67.0
125	65.5
160	66.0
200	65.5
250	67.0
315	64.5
400	65.0
500	63.5
630	59.0
800	54.5
1000	48.0
1250	41.0
1600	36.0
2000	29.0
2500	23.0
3150	22.0



* 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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