



# Acoustical Testing Laboratory



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

## TEST REPORT

For

Kinetics Noise Control  
6300 Irelan Place  
Dublin, Ohio 43017-0655  
Matthew Golden / 614-889-0480

**Sound Transmission Loss Test**  
ASTM E 90 - 04 / E 413 - 04  
On

**6 Inch (152mm) Concrete Slab Overlaid with  
Quarry Tile and Mortar on 5mm Kinetics Noise  
Control Model IsoLayment HB Underlayment**

Page 1 of 4

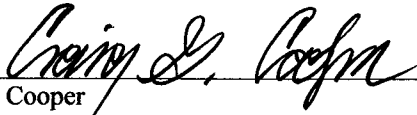
Report Number: NGC 5009070

Assignment Number: G-451

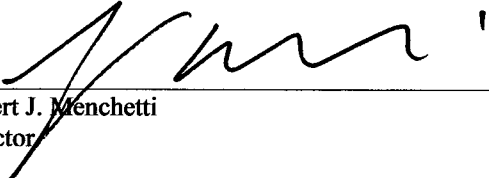
Test Date: 09/03/2008

Report Date: 11/11/2009

Submitted by: \_\_\_\_\_

  
Craig G. Cooper  
Test Engineer

Reviewed by: \_\_\_\_\_

  
Robert J. Menchetti  
Director

The results reported above apply to specific samples submitted for measurement.  
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# Acoustical Testing Laboratory



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Report Number: NGC 5009070

**Test Method:** This test method conforms explicitly with the American Society for Testing and Materials Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements - Designation: E 90 - 04 / E 413 - 04.

**Specimen Description:** 6 inch (152mm) Concrete Slab Overlaid with according to client, Quarry Tile Flooring on 5mm IsoLayment HB underlayment. This specimen was originally tested on 09/03/2008 and the results were reported in NGC5008069 under a different product identity.

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 latex-modified Thin-set mortar and latex-modified sanded grout mixtures 4.9 kg/m<sup>2</sup> (1.0 PSF).
- 1 layer of 5.8mm (0.228 in.) Kinetics Noise Control Model IsoLayment HB rubber underlayment. Underlayment had a 0.20mm (0.008 in.) thick matte backing adhered to the top. Installed with matte backing up. Sample weight was found to be 3.9 kg/m<sup>2</sup> (0.8 PSF).
- 1 layer of Parabond® 4700 Fusion Series Rubber Tile and Stair Tread Adhesive applied with a 3/32 in. U notch trowel, according to manufacturers' directions.
- 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 402.3 kg/m<sup>2</sup> (82.4 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:** Concrete slab cured for a minimum of 28 days.

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

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

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## Sound Transmission Loss Test Data

Test: ASTM E 90 - 04 / ASTM E 413 - 04

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No. of test report: NGC5009070

Date: 9/3/2008

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

**Source room**

Volume V = 53.2 m<sup>3</sup>  
 Temperature [°C]: 24.8  
 Humidity [%]: 57

**Receiving room**

Volume V = 63.9 m<sup>3</sup>  
 Temperature [°C]: 23.6  
 Humidity [%]: 51

### Sound Transmission Class STC = 53 dB

Sum of unfavorable deviations: 27.0 dB

Max. unfavorable deviation: 7.0 dB at 400 Hz

Frequency	STL	L1	L2	T	Corr.	u.Dev.	ΔSTL
[Hz]	[dB]	[dB]	[dB]	[s]	[dB]	[dB]	
50	35	97.6	70.2	3.69	8.1	--	3.189
63	40	101.9	69.1	2.82	6.9	--	2.988
80	49	105.8	65.5	4.28	8.7	--	4.068
100	40	103.6	71.2	3.43	7.8	--	3.114
125	41	104.7	72.1	3.62	8.0	--	0.943
160	39	107.8	77.3	3.91	8.3	1	1.487
200	39	101.8	71.5	4.06	8.5	4	1.466
250	41	102.7	68.5	3.03	7.2	5	0.721
315	43	105.0	68.9	3.08	7.3	6	0.469
400	45	102.5	65.1	3.00	7.2	7	0.728
500	50	99.4	56.7	2.78	6.9	3	0.332
630	53	98.2	51.4	2.63	6.6	1	0.300
800	55	98.8	50.7	2.59	6.6	--	0.332
1000	57	98.7	48.4	2.44	6.3	--	0.283
1250	59	99.9	46.8	2.18	5.8	--	0.265
1600	60	99.0	44.7	2.04	5.5	--	0.424
2000	64	99.0	40.4	1.89	5.2	--	0.447
2500	65	100.3	39.6	1.73	4.8	--	0.100
3150	68	99.7	36.3	1.56	4.3	--	0.224
4000	70	99.5	33.7	1.35	3.7	--	0.361
5000	72	99.1	30.0	1.18	3.1	--	0.900

STL = Sound Transmission Loss, dB  
 L1 = Source Room Level, dB  
 L2 = Receiving Room Level, dB  
 T = Reverberation Time, seconds  
 Δ STL = Uncertainty for 95% Confidence Level

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

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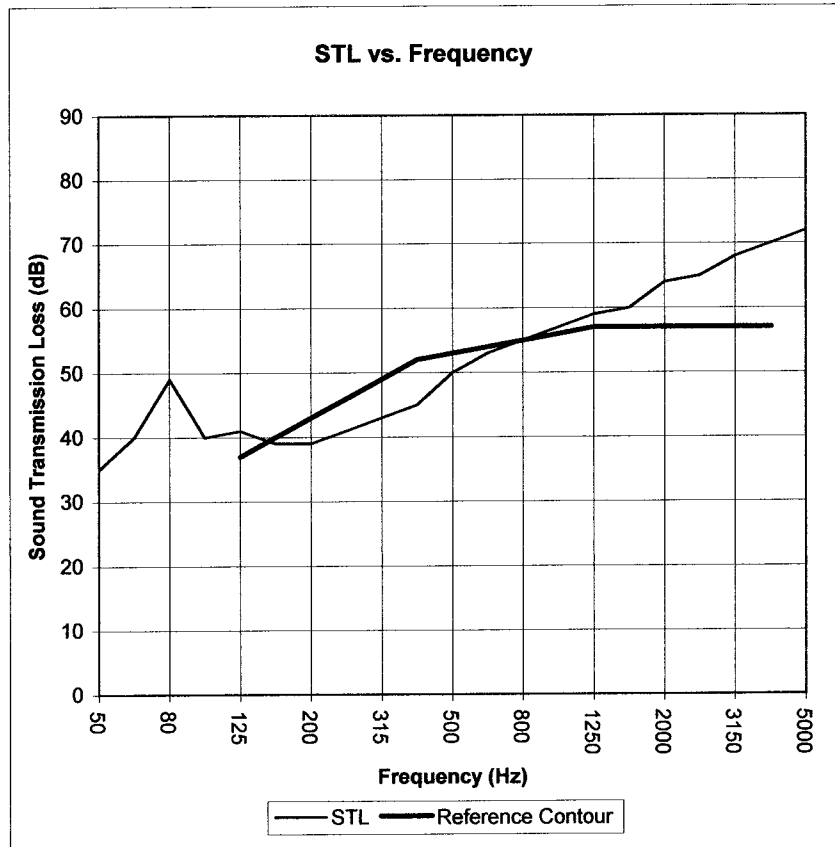
## Sound Transmission Loss Test Data

Per: ASTM E 90 - 04 / ASTM E 413 - 04

No. of test report: NGC5009070  
 Test Date: 9/3/2008  
 Size: 17.84 m<sup>2</sup>

**Sound Transmission Class STC = 53 dB**

Frequency [Hz]	STL [dB]	ΔSTL
50	35	3.189
63	40	2.988
80	49	4.068
100	40	3.114
125	41	0.943
160	39	1.487
200	39	1.466
250	41	0.721
315	43	0.469
400	45	0.728
500	50	0.332
630	53	0.300
800	55	0.332
1000	57	0.283
1250	59	0.265
1600	60	0.424
2000	64	0.447
2500	65	0.100
3150	68	0.224
4000	70	0.361
5000	72	0.900



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

STL = Sound Transmission Loss, dB  
 Δ STL = Uncertainty for 95% Confidence Level

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## TEST REPORT

For

Kinetics Noise Control  
6300 Irelan Place  
Dublin, Ohio 43017-0655  
Matthew Golden / 614-889-0480

**Impact Sound Transmission Test**  
ASTM E 492 – 04 / ASTM E 989 – 06  
On

**6 Inch (152mm) Concrete Slab Overlaid with  
Quarry Tile and Mortar on 5mm Kinetics Noise  
Control Model IsoLayment HB Underlayment**

Page 1 of 4

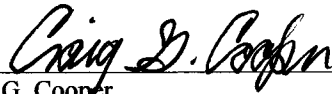
Report Number: NGC 7009123

Assignment Number: G-451

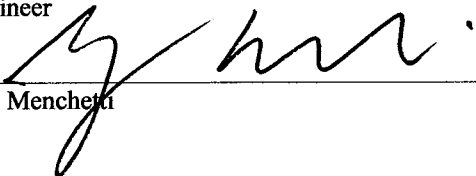
Test Date: 09/03/2008

Report Date: 11/11/2009

Submitted by:

  
Craig G. Cooper  
Test Engineer

Reviewed by:

  
Robert J. Menchetti  
Director

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Report Number: NGC 7009123

**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 - 06. 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 according to client, Quarry Tile Flooring on 5mm IsoLayment HB underlayment. This specimen was originally tested on 09/03/2008 and the results were reported in NGC7008134 under a different product identity.

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 latex-modified Thin-set mortar and latex-modified sanded grout mixtures 4.9 kg/m<sup>2</sup> (1.0 PSF).
- 1 layer of 5.8mm (0.228 in.) Kinetics Noise Control Model IsoLayment HB rubber underlayment. Underlayment had a 0.20mm (0.008 in.) thick matte backing adhered to the top. Installed with matte backing up. Sample weight was found to be 3.9 kg/m<sup>2</sup> (0.8 PSF).
- 1 layer of Parabond® 4700 Fusion Series Rubber Tile and Stair Tread Adhesive applied with a 3/32 in. U notch trowel, according to manufacturers' directions.
- 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 402.3 kg/m<sup>2</sup> (82.4 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:** 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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<b>Normalized impact sound pressure level</b>						
Test: ASTM E 492 - 04 / ASTM E 989 - 06						
						Page 3 of 4
Test Number: NGC7009123			Date: 9/3/2008			
Size: 17.8 m <sup>2</sup>						
<b>Source room</b>			<b>Receiving room</b>			
Temperature [°C]: 24.8			Volume V = 63.9 m <sup>3</sup>			
Humidity [%]: 57			Temperature [°C]: 23.6			
			Humidity [%]: 51			
<b>Impact Insulation Class IIC = 48 dB</b>						
Sum of unfavorable deviations: 25.0 dB						
Max. unfavorable deviation: 6.0 dB at 400 Hz						
Frequency	L <sub>n</sub>	L <sub>2</sub>	T	Corr.	u.Dev.	ΔL <sub>n</sub>
[Hz]	[dB]	[dB]	[s]	[dB]	[dB]	
50	59	64.8	3.69	-5.8	--	0.419
63	53	57.8	2.82	-4.8	--	0.293
80	55	60.9	4.28	-5.9	--	0.319
100	56	61.0	3.43	-5.0	--	0.631
125	62	67.7	3.62	-5.7	--	0.302
160	66	71.6	3.91	-5.6	2	0.175
200	65	71.2	4.06	-6.2	1	0.157
250	66	71.1	3.03	-5.1	2	0.111
315	66	71.1	3.08	-5.1	2	0.086
400	69	73.7	3.00	-4.7	6	0.086
500	68	72.6	2.78	-4.6	6	0.082
630	66	69.9	2.63	-3.9	5	0.045
800	61	65.1	2.59	-4.1	1	0.054
1000	59	63.1	2.44	-4.1	--	0.050
1250	56	59.3	2.18	-3.3	--	0.052
1600	53	55.8	2.04	-2.8	--	0.050
2000	49	51.3	1.89	-2.3	--	0.037
2500	46	47.9	1.73	-1.9	--	0.034
3150	42	44.1	1.56	-2.1	--	0.044
4000	41	42.6	1.35	-1.6	--	0.036
5000	38	38.8	1.18	-0.8	--	0.033

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

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## Normalized impact sound pressure level

Test: ASTM E 492 - 04 / ASTM E 989 - 06

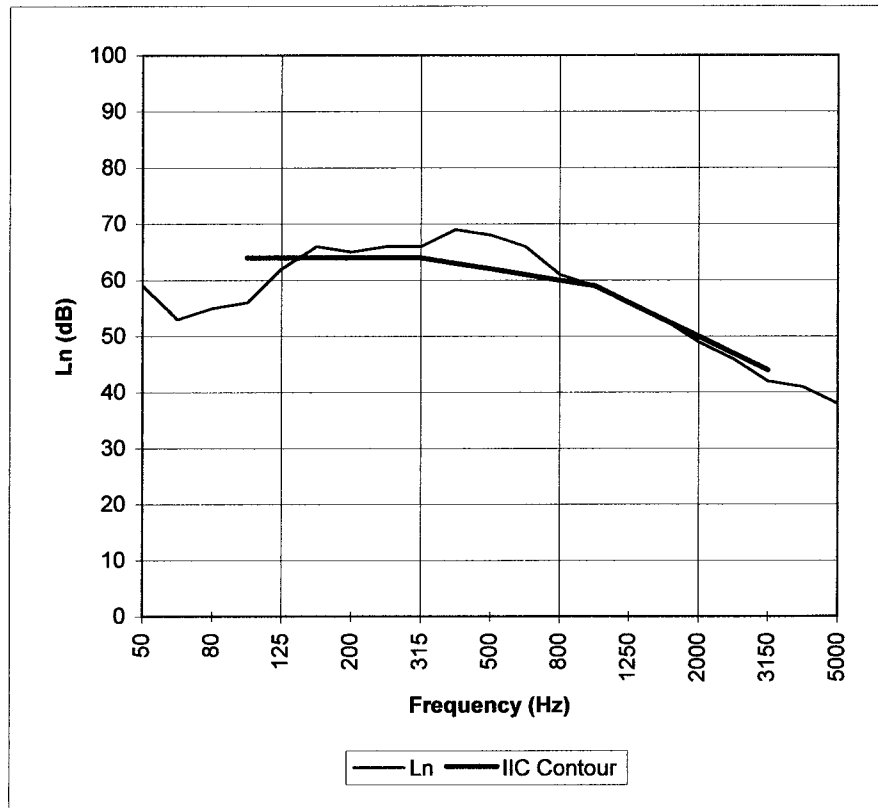
Page 4 of 4

Test Number: NGC7009123

Date: 9/3/2008

**Impact Insulation Class IIC = 48 dB**

Frequency [Hz]	$L_n$ [dB]
50	59
63	53
80	55
100	56
125	62
160	66
200	65
250	66
315	66
400	69
500	68
630	66
800	61
1000	59
1250	56
1600	53
2000	49
2500	46
3150	42
4000	41
5000	38



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

$L_n$  = Normalized Sound Pressure Level, dB

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## TEST REPORT

For

Kinetics Noise Control  
6300 Irelan Place  
Dublin, Ohio 43017-0655  
Matthew Golden / 614-889-0480

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

**6 Inch (152mm) Concrete Slab Overlaid with  
Quarry Tile and Mortar on 5mm Kinetics Noise  
Control Model IsoLayment HB Underlayment**

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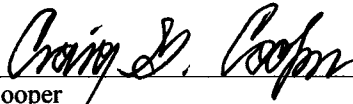
Report Number: NGC 7009124

Assignment Number: G-451

Test Date: 09/03/2008

Report Date: 11/11/2009

Submitted by: \_\_\_\_\_

  
Craig G. Cooper  
Test Engineer

Reviewed by: \_\_\_\_\_

  
Robert J. Menchetti  
Director

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Report Number: NGC 7009124

**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 5mm IsoLayment HB underlayment. This specimen was originally tested on 09/03/2008 and the results were reported in NGC7008135 under a different product identity.

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 latex-modified Thin-set mortar and latex-modified sanded grout mixtures 4.9 kg/m<sup>2</sup> (1.0 PSF).
- 1 layer of 5.8mm (0.228 in.) Kinetics Noise Control Model IsoLayment HB rubber underlayment. Underlayment had a 0.20mm (0.008 in.) thick matte backing adhered to the top. Installed with matte backing up. Sample weight was found to be 3.9 kg/m<sup>2</sup> (0.8 PSF).
- 1 layer of Parabond® 4700 Fusion Series Rubber Tile and Stair Tread Adhesive applied with a 3/32 in. U notch trowel, according to manufacturers' directions.
- 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 402.3 kg/m<sup>2</sup> (82.4 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.

**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				
Test Number: NGC7009124		Date: 9/3/2008			Page 3 of 6	
Size: 17.8 m <sup>2</sup>						
<b>Source room</b>		<b>Receiving room</b>				
Temperature [°C]: 24.8		Volume V = 63.9 m <sup>3</sup>				
Humidity [%]: 57		Temperature [°C]: 23.6				
					Humidity [%]: 51	
Frequency	Ln	L2	T	Corr.	u.Dev.	ΔL <sub>n</sub>
[Hz]	[dB]	[dB]	[s]	[dB]	[dB]	
50	62.0	68.0	3.83	-6.0	--	0.469
63	58.0	63.2	3.54	-5.2	--	0.321
80	59.0	65.6	4.22	-6.6	--	0.276
100	63.0	68.5	3.50	-5.5	--	0.554
125	67.0	72.3	3.54	-5.3	--	0.309
160	69.0	75.2	4.01	-6.2	--	0.204
200	68.0	74.1	4.24	-6.1	--	0.252
250	71.0	75.9	3.17	-4.9	--	0.118
315	68.0	72.6	3.11	-4.6	--	0.115
400	71.0	75.9	3.04	-4.9	--	0.082
500	68.0	72.5	2.73	-4.5	--	0.057
630	70.0	74.4	2.65	-4.4	--	0.060
800	70.0	74.1	2.64	-4.1	--	0.054
1000	71.0	75.0	2.48	-4.0	--	0.047
1250	72.0	75.4	2.19	-3.4	--	0.047
1600	72.0	75.4	2.09	-3.4	--	0.043
2000	73.0	75.3	1.90	-2.3	1.0	0.039
2500	74.0	76.0	1.72	-2.0	5.0	0.035
3150	74.0	76.0	1.57	-2.0	8.0	0.032
4000	76.0	77.6	1.37	-1.6	--	0.033
5000	76.0	76.5	1.19	-0.5	--	0.028
<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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# Acoustical Testing Laboratory



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Test: ASTM E 2179 - 03		6" Concrete Slab with Specimen					Page 4 of 6
Test Number: NGC7009124		Date: 9/3/2008					
Size: 17.8 m <sup>2</sup>							
<b>Source room</b>			<b>Receiving room</b>				
Temperature [°C]: 24.8			Volume V = 63.9 m <sup>3</sup>				
Humidity [%]: 57			Temperature [°C]: 23.6				
			Humidity [%]: 51				
Frequency	L <sub>n</sub>	L2	T	Corr.	u.Dev.	ΔL <sub>n</sub>	
[Hz]	[dB]	[dB]	[s]	[dB]	[dB]		
50	59	64.8	3.69	-5.8	--	0.419	
63	53	57.8	2.82	-4.8	--	0.293	
80	55	60.9	4.28	-5.9	--	0.319	
100	56	61.0	3.43	-5.0	--	0.631	
125	62	67.7	3.62	-5.7	--	0.302	
160	66	71.6	3.91	-5.6	2	0.175	
200	65	71.2	4.06	-6.2	1	0.157	
250	66	71.1	3.03	-5.1	2	0.111	
315	66	71.1	3.08	-5.1	2	0.086	
400	69	73.7	3.00	-4.7	6	0.086	
500	68	72.6	2.78	-4.6	6	0.082	
630	66	69.9	2.63	-3.9	5	0.045	
800	61	65.1	2.59	-4.1	1	0.054	
1000	59	63.1	2.44	-4.1	--	0.050	
1250	56	59.3	2.18	-3.3	--	0.052	
1600	53	55.8	2.04	-2.8	--	0.050	
2000	49	51.3	1.89	-2.3	--	0.037	
2500	46	47.9	1.73	-1.9	--	0.034	
3150	42	44.1	1.56	-2.1	--	0.044	
4000	41	42.6	1.35	-1.6	--	0.036	
5000	38	38.8	1.18	-0.8	--	0.033	
<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>							

The results reported above apply to specific samples submitted for measurement. No responsibility is assumed for performance of any other specimen. This report may not be reproduced except in full, without the written approval of the laboratory. The laboratory's accreditation or any of its test reports in no way constitutes or implies product certification, approval, or endorsement by NVLAP or any agency of the U.S. Government.

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

Test: ASTM E 2179 - 03

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Test Number: NGC7009124

Date: 9/3/2008

Size: 17.8 m<sup>2</sup>

**Increase in Impact Insulation Class  $\Delta$ IIC = 19.0**

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	63.0	56.0	7.0	67.0	60.0
125	67.0	62.0	5.0	67.5	62.5
160	69.0	66.0	3.0	68.0	65.0
200	68.0	65.0	3.0	68.5	65.5
250	71.0	66.0	5.0	69.0	64.0
315	68.0	66.0	2.0	69.5	67.5
400	71.0	69.0	2.0	70.0	68.0
500	68.0	68.0	0.0	70.5	70.5
630	70.0	66.0	4.0	71.0	67.0
800	70.0	61.0	9.0	71.5	62.5
1000	71.0	59.0	12.0	72.0	60.0
1250	72.0	56.0	16.0	72.0	56.0
1600	72.0	53.0	19.0	72.0	53.0
2000	73.0	49.0	24.0	72.0	48.0
2500	74.0	46.0	28.0	72.0	44.0
3150	74	42	32.0	72.0	40.0

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

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

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

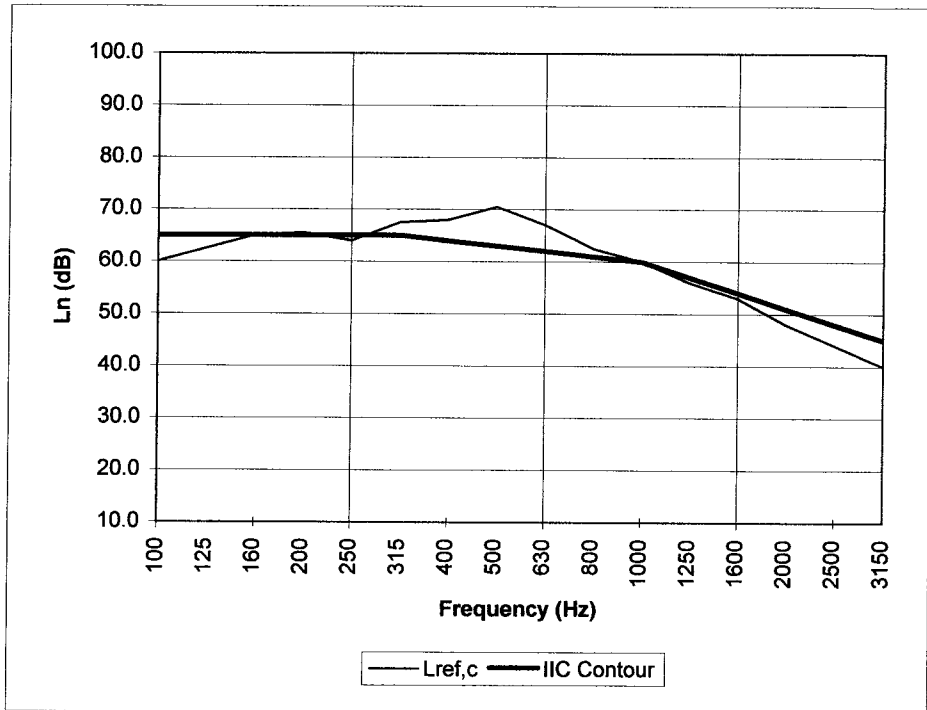
Test: ASTM E 2179 - 03

Test Number: NGC7009124

Date: 9/3/2008

**Increase in Impact Insulation Class  $\Delta IIC = 19.0$**

Frequency [Hz]	Lref,c [dB]
100	60.0
125	62.5
160	65.0
200	65.5
250	64.0
315	67.5
400	68.0
500	70.5
630	67.0
800	62.5
1000	60.0
1250	56.0
1600	53.0
2000	48.0
2500	44.0
3150	40.0



\* 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

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

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