



# Acoustical Testing Laboratory

## TEST REPORT

for

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### Impact Sound Transmission Test ASTM E 492 – 04 / ASTM E 989 – 89 On

**Floor-Ceiling Assembly**  
**6 in. (152 mm) Concrete Slab with Suspended Gypsum Ceiling Overlaid with;**  
**Wood Laminate Flooring over QuietWalk™ Underlayment**

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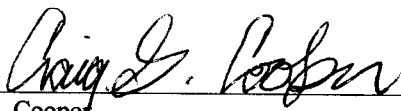
Report Number: NGC 7005008

Assignment Number: G-245

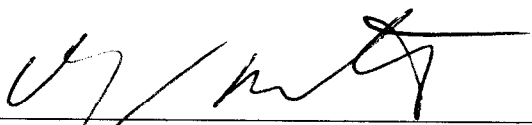
Test Date: 02/22/2005

Report Date: 02/25/2005

Submitted by:

  
\_\_\_\_\_  
Craig G. Cooper  
Test Engineer

Reviewed by:

  
\_\_\_\_\_  
Robert J. Monchetti  
Director

The results reported above apply to specific samples submitted for measurement.  
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Report Number: NGC 7005008

**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.

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

**Specimen Description:** Floor-ceiling assembly. 6 inch (152mm) concrete slab with suspended gypsum ceiling covered with, according to client; wood laminate flooring over QuietWalk™ Underlayment.

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

- 1 layer of T&G wood laminate flooring, 7.9mm (5/16) in. thick, 197mm (7-3/4 in.) wide planks, 7.71 kg/m<sup>2</sup> (1.58 PSF).
- 1 layer of 4.7mm (3/16 in.) QuietWalk™ underlayment, made of nonwoven fibers with layer of polyethylene film attached to up side. 1.07 kg/m<sup>2</sup> (0.22 PSF)
- 152mm (6 in.) thick reinforced concrete slab 366 kg/m<sup>2</sup> (75.0 PSF).
- Drywall grid suspension system consisting of 15.9mm (5/8 in.) type X gypsum board 11.2 kg/m<sup>2</sup> (2.3 PSF) attached with 28.6mm (1-1/8in.) screws, 305mm (12 in.) o.c. to suspended grid suspension system. 305mm (12 in.) plenum with 89mm (3-1/2 in.) lay-in fiberglass insulation 0.78 kg/m<sup>2</sup> (0.16 PSF).

The overall weight of the test assembly is 387 kg/m<sup>2</sup> (79.3 PSF) nominal.

The perimeter of the floor assembly was sealed with rubber gasketing and a sand filled trough. The test assembly is structurally isolated from the receiving room. Board joints were taped and the ceiling perimeter was sealed with acoustical caulk.

**Specimen size:** 3658mm x 4877mm (12 ft x 16 ft).

Test samples were submitted by client and tested as received.

**Conditioning:** Assembly was stored under room conditions prior to testing.

**Cure Times:**

Concrete 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 - 89						
Test Number: NGC7005008					Date: 2/22/2005	
Size: 17.84 m <sup>2</sup>						
<b>Source room</b>			<b>Receiving room</b>			
Temperature [°C]: 21.6			Volume V = 40.00 m <sup>3</sup>			
Humidity [%]: 33			Temperature [°C]: 19.6			
			Humidity [%]: 63			
<b>Impact Insulation Class IIC = 71 dB</b>						
Sum of unfavorable deviations: 26.4 dB						
Max. unfavorable deviation: 7.9 dB at 250 Hz						
Frequency	L <sub>n</sub>	L <sub>2</sub>	T	Corr.	u.Dev.	ΔL <sub>n</sub>
[Hz]	[dB]	[dB]	[s]	[dB]	[dB]	
100	45.0	51.6	3.27	-6.6	3.9	0.428
125	46.0	53.1	3.10	-7.1	4.9	0.519
160	46.0	53.6	3.45	-7.6	4.9	0.240
200	44.0	50.6	3.13	-6.6	2.9	0.112
250	49.0	55.5	3.23	-6.5	7.9	0.092
315	41.0	48.3	3.16	-7.3	--	0.101
400	33.0	39.5	2.99	-6.5	--	0.084
500	32.0	37.9	2.79	-5.9	--	0.079
630	32.0	38.6	2.68	-6.6	--	0.055
800	27.0	33.6	2.74	-6.6	--	0.045
1000	24.0	30.1	2.67	-6.1	--	0.059
1250	26.0	31.2	2.35	-5.2	--	0.045
1600	25.0	30.0	2.15	-5.0	--	0.042
2000	24.0	28.3	1.90	-4.3	--	0.038
2500	22.0	25.9	1.65	-3.9	--	0.040
3150	23.0	26.4	1.58	-3.4	1.9	0.038
4000	22.0	25.0	1.42	-3.0	--	0.040
5000	18.0	21.0	1.29	-3.0	--	0.040

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 - 89

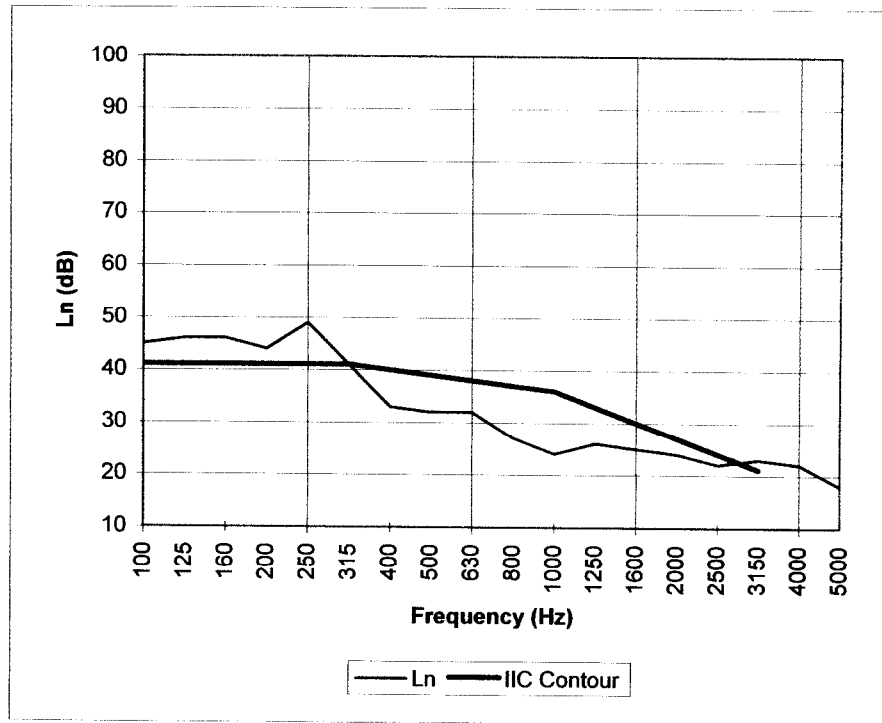
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Test Number: NGC7005008

Date: 2/22/2005

**Impact Insulation Class IIC = 71dB**

Frequency [Hz]	$L_n$ [dB]
100	45
125	46
160	46
200	44
250	49
315	41
400	33
500	32
630	32
800	27
1000	24
1250	26
1600	25
2000	24
2500	22
3150	23
4000	22
5000	18



\* 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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