

## TEST REPORT

for

### **Diversified Industries**

121 High Hill Rd.  
Swedesboro, NJ 08085  
Thomas Haley / 856-662-1981

### **Impact Sound Transmission Test**

ASTM E 492 – 09 / ASTM E 989 – 06

On

### **6 Inch Concrete Slab Floor–Suspended Ceiling Assembly Overlaid with; LVT Flooring on 0264070 LVT Underlayment**

Report Number: NGC 7014171

Assignment Number: G-1086

Test Date: 7/28/2014

Report Approval Date: 8/11/2014

Submitted by:

  
\_\_\_\_\_  
Andrew E. Heuer  
Senior Test Engineer

Reviewed by:

  
\_\_\_\_\_  
Robert J. Menchetti  
Director

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

**Revision Summary:**

Date	SUMMARY
Approval Date: 8/11/2014	Original issue date. Original NGCTS report #: NGC 7014171

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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 Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine - Designation: E 492-09/ E 989-06.  
The uncertainty limits of each tapping machine location met the precision requirements of section A1.4 of ASTM E 492-09.

**Specimen Description:** 6 inch concrete slab floor-suspended ceiling assembly, overlaid with, according to client, LVT Flooring over 0264070 LVT underlayment.

The test specimen was a floor- suspended ceiling assembly observed to consist of the following.  
All measured weights and dimensions are averaged:

- 1 layer of, according to client, LVT flooring. The LVT flooring was floating on the 0264070 LVT underlayment. Measured dimensions: 241.30 mm x 1492.25 mm (9-1/2 in. x 58-3/4 in.) Measured thickness: 4.40 mm (0.173 in.) Measured weight: 9.33 kg/m<sup>2</sup> (1.91 PSF)
- 1 layer of, according to the client, 0264070 LVT underlayment. The underlayment seams were butted and taped together, and was floating over the concrete slab. Measured thickness: 0.97 mm (0.038 in.) Measured weight: 0.10 kg/m<sup>2</sup> (0.02 PSF)
- 152.4 mm (6 in.) thick reinforced concrete slab, weighing: 366.2 kg/m<sup>2</sup> (75.0 PSF)
- 1 layer of, 88.9 mm (3.5 in.) unfaced fiberglass batt insulation which was laid over the suspended grid system parallel to the main tees. Sample weight: 0.78 kg/m<sup>2</sup> (0.16 PSF)
- Gypsum wallboard ceiling grid suspension system. System is comprised of main tees and cross tees. The main tees were placed 1219.2 mm (48 in.) o.c. and the cross tees were placed 609.6 mm (24 in.) o.c. 16 gauge galvanized tie wire was used to attach the main tees to concrete anchors, located 1219.2 mm (48 in.) o.c. along the longitudinal axis, suspending the grid 304.8 mm (12 in.) below the concrete slab.
- 1 layer of, 15.9 mm (5/8 in.) Type X gypsum wallboard. The wallboard was attached parallel to the suspended grid suspension system mains, using 28.6 mm (1-1/8 in.) Type S drywall screws spaced 304.8 mm (12 in.) o.c. The wallboard joints were taped. Suspended gypsum wallboard grid ceiling weighted: 11.23 kg/m<sup>2</sup> (2.3 PSF)

The overall weight of the test assembly is: 387.58 kg/m<sup>2</sup> (79.39 PSF)

The perimeter of the test frame was sealed with a rubber gasket and a sand filled trough.  
The test frame was structurally isolated from the receiving room.

**Specimen size:** 3657.6 mm x 4876.8 mm (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 4 and 5 of the report.

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<b>Normalized impact sound pressure level</b>						
Test: ASTM E 492 - 09 / ASTM E 989 - 06						
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Date: 7/28/2014						
Specimen Size [m <sup>2</sup> ]: 17.8						
<b>Source room</b>				<b>Receiving room</b>		
Rm Temp [°C]: 25.5				Volume [m <sup>3</sup> ]: 60.4		
Humidity [%]: 58				Rm Temp [°C]: 23.5		
				Humidity [%]: 52		
<b>Impact Insulation Class IIC [dB]: 71</b>						
Sum of Unfavorable Deviations [dB]: 20						
Max. Unfavorable Deviation [dB]: 8 at 160 Hz						
Frequency	L <sub>n</sub>	L2	d	Corr.	u.Dev.	ΔL <sub>n</sub>
[Hz]	[dB]	[dB]	[dB/s]	[dB]	[dB]	
100	43	48.4	20.1	-5.4	2	4.15
125	47	51.8	20.5	-4.8	6	2.46
160	49	54.8	15.3	-5.8	8	2.51
200	43	49.1	15.5	-6.1	2	0.98
250	43	47.5	19.7	-4.5	2	0.53
315	39	44.4	18.3	-5.4		0.79
400	36	42.7	19.3	-6.7		1.03
500	32	39.1	20.6	-7.1		0.86
630	31	37.2	22.4	-6.2		0.98
800	23	29.0	22.5	-6.0		0.75
1000	21	25.8	24.4	-4.8		0.55
1250	17	21.8	26.9	-4.8		0.46
1600	12	17.2	27.8	-5.2		0.46
2000	12	17.1	31.1	-5.1		0.71
2500	10	15.1	33.5	-5.1		0.86
3150	10	14.3	36.6	-4.3		0.61
4000	9	12.2	41.8	-3.2		0.27
5000	7	10.6	47.1	-3.6		0.24
L <sub>n</sub> = Normalized Sound Pressure Level, dB L2 = Receiving Room Level, dB d = Decay Time, dB/second ΔL <sub>n</sub> = Uncertainty for 95% Confidence Level						

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**Normalized impact sound pressure level**

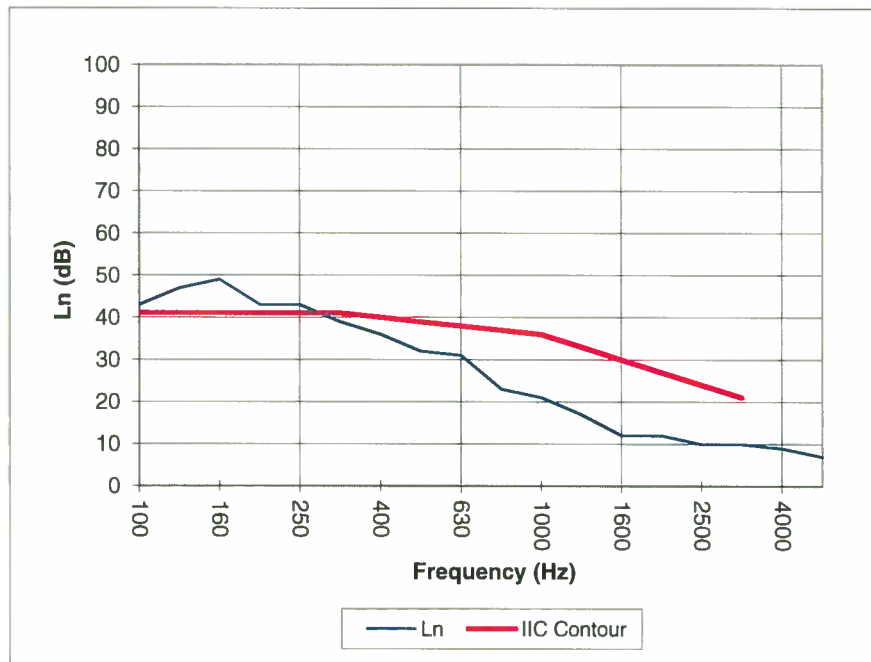
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 Test Date: 7/28/2014  
 Specimen Size [m²]: 17.8

**Impact Insulation Class IIC [dB]: 71**

Frequency [Hz]	L <sub>n</sub> [dB]
100	43
125	47
160	49
200	43
250	43
315	39
400	36 *
500	32 *
630	31 *
800	23
1000	21
1250	17
1600	12 *
2000	12 *
2500	10 *
3150	10 *
4000	9 *
5000	7 *



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

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

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