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TEST REPORT

for

Regupol America
33 Keystone Drive
Lebanon, PA 17042
Bill Devin/ 717-675-2198

Impact Sound Transmission Test

ASTM E 492 – 09 / ASTM E 989 – 06

On

6 Inch (152mm) Concrete Slab Overlaid with Engineered Hardwood Flooring Adhered with Sikabond-T35 Adhesive over Regupol Sonus HS500, 5 mm Underlayment Adhered with Sikabond-T35 Adhesive With Suspended Gypsum Board Ceiling

Report Number: NGC 7011090_R2

Assignment Number: G-709

Test Date: 07/29/2011

Report Approval Date: 09/12/2011

Reissue Date: 8/20/2014

Submitted by: _____
Andrew E. Heuer
Senior Test Engineer

Reviewed by: _____
Robert J. Menchetti
Director

Revision Summary:

Date	SUMMARY
Approval Date: 9/12/2014	Original issue date. Original NGCTS report #: NGC 7011090
Reissue Date: 6/24/2014	Reissued Report #: NGC 7011090_R1 The report was reissued due to a client designated company name change.
Approval Date: 8/20/2014	Reissued Report #: 7011090_R2 The Report was revised and reissued due to a client designate product name change and company name change.

Report Number: NGC 7011090_R2

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 (152mm) Concrete Slab including suspended grid 5/8 inch gypsum board ceiling system, overlaid with, according to client, Engineered wood flooring with Sikabond-T35 adhesive over Regupol Sonus HS500, 5 mm underlayment adhered with Sikabond-T35 adhesive.

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

- 1 layer of 13.1mm (0.515 in.) Hard Maple Select V Engineered Hardwood flooring. Samples were 127mm (5 in.) wide, by random length planks. Sample weight was 7.5 kg/m^2 (1.54 PSF).
- 1 layer of Sikabond-T35 adhesive. Sample was troweled on using client supplied P5 trowel.
- 1 layer of, according to client, Regupol Sonus HS500, 5 mm underlayment. The underlayment was adhesively applied to the concrete with Sikabond-T35 adhesive. Meausred thickness: 5.18mm (0.204 in.) Measured weight: 3.7 kg/m^2 (0.76 PSF)
- 1 layer of Sikabond-T35 adhesive. Sample was troweled on using client supplied P5 trowel.
- 152.4mm (6 in.) thick reinforced concrete slab 366.2 kg/m^2 (75.0 PSF).
- 88.9mm (3-1/2 in.) fiberglass unfaced batt insulation. Sample weight was 0.78 kg/m^2 (0.16 PSF). The insulation was laid over the suspended grid system parallel with the main tee's.
- Gypsum board ceiling grid suspension system. System is comprised of main tees and cross tees. The main tees were placed 1219.2mm (48 in.) on center and the cross tees were placed 609.6mm (24 in.) on center. 16 gauge galvanized tie wire was used to attach the main tees to concrete anchors, located 1219.2mm (48 in.) o.c. along the longitudinal axis, suspending the grid 304.8mm (12 in.) below the concrete slab.
- 1 layer of 15.9mm (5/8 in.) Type X gypsum board. Sample was observed to be 15.9mm (0.628 in.) thick and weighed 11.2 kg/m^2 (2.3 PSF). The board was attached 304.8mm (12 in.) o.c. parallel to suspended grid suspension system mains, using 31.8mm (1.250 in.) Type S drywall screws. The board joints were taped.

The overall weight of the test assembly is 389.4 kg/m^2 (79.76 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: 3657.6mm x 4876.8mm (12 ft. x 16 ft.).

Conditioning: Adhesive cured for minimum of 24 hours.
Concrete cured minimum of 28 days.

Test Results: The results of the tests are given on pages 4 and 5.

Normalized impact sound pressure level

Test: ASTM E 492 - 09 / ASTM E 989 - 06

Test Report: NGC 7011090_R2 Date: 7/29/2011
Specimen Size [m²]: 17.8

Source room

Rm Temp [°C]: 26
Humidity [%]: 72

Receiving room

Volume [m³]: 60
Rm Temp [°C]: 23.5
Humidity [%]: 47

Impact Insulation Class IIC [dB]: 71

Sum of Unfavorable Deviations [dB]: 27
Max. Unfavorable Deviation [dB]: 7 at 100 Hz

Frequency [Hz]	L_n [dB]	L2 [dB]	d [dB/s]	Corr. [dB]	u.Dev. [dB]	ΔL_n
50	53	56.6	24.72	-3.6		2.41
63	57	59.6	31.87	-2.6		2.25
80	48	51.9	22.87	-3.9		2.98
100	48	50.1	34.19	-2.1	7	2.00
125	48	53.6	2.88	-5.6	7	2.86
160	46	51.8	3.39	-5.8	5	1.94
200	46	51.1	3.45	-5.1	5	1.09
250	44	49.2	3.44	-5.2	3	1.09
315	39	44.8	3.26	-5.8		0.38
400	40	45.9	3.22	-5.9		0.49
500	34	40.9	3.13	-6.9		0.30
630	34	40.3	2.85	-6.3		1.34
800	24	30.9	2.74	-6.9		0.22
1000	26	30.6	2.53	-4.6		0.16
1250	22	26.1	2.26	-4.1		0.21
1600	13	18.8	2.12	-5.8		0.34
2000	13	18.3	1.86	-5.3		0.41
2500	11	15.5	1.67	-4.5		0.48
3150	11	14.8	1.54	-3.8		0.50
4000	11	14.5	1.37	-3.5		0.58
5000	9	11.9	1.20	-2.9		0.61

L_n = Normalized Sound Pressure Level, dB
L2 = Receiving Room Level, dB
d = Decay Time, dB/second
ΔL_n = Uncertainty for 95% Confidence Level

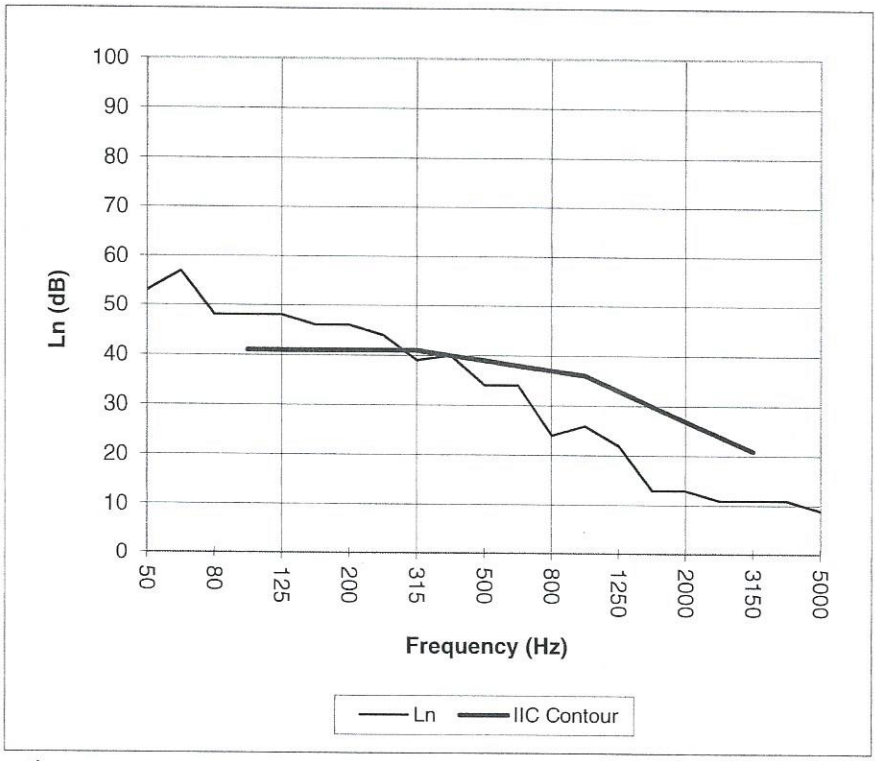
Normalized impact sound pressure level

Test: ASTM E 492 - 09 / ASTM E 989 - 06

Test Report: NGC 7011090_R2
Test Date: 7/29/2011
Specimen Size [m²]: 17.8

Impact Insulation Class IIC [dB]: 71

Frequency [Hz]	L_n [dB]	
50	53	
63	57	
80	48	
100	48	
125	48	
160	46	
200	46	
250	44	
315	39	
400	40	
500	34	*
630	34	*
800	24	*
1000	26	
1250	22	
1600	13	*
2000	13	*
2500	11	*
3150	11	*
4000	11	*
5000	9	*



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

L_n = Normalized Sound Pressure Level, dB