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TEST REPORT

for

CONFIDENTIAL OEM ON BEHALF OF DIVINE FLOORING

[redacted]

Impact Sound Transmission Test

ASTM E 492 – 09 (2016)e1 / ASTM E 989 – 18

On

6 Inch (152 mm) Concrete Slab Floor- Ceiling Assembly
Overlaid with Loose Lay 7" x 48" 5.0mm x 0.5mm flooring
With a Suspended-Gypsum Board Ceiling
With 3-1/2 Inch Fiberglass Insulation

Report Number: NGC 7020120

Assignment Number: G-1695

Test Date: 07/29/2020

Report Reissue Date: 10/16/2020

Submitted by: _____
Anthony J. Rivers
Test Technician

Reviewed by: _____
Robert J. Menchetti
Director

Revision Summary:

Date	SUMMARY
Approval Date: 10/16/2020	Original issue date: 10/16/2020 Original NGCTS report: NGC 7020120

Report Number: NGC 7020120

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 (2016)e1 / E 989-18.

The uncertainty limits of each tapping machine location met the precision requirements of section A1.4 of ASTM E 492-09 (2016)e1.

Specimen Description: 6 inch concrete slab floor suspended ceiling assembly overlaid with, according to client, Loose Lay 7" X 48" 5.0mm x 0.5mm flooring with 3-1/2 inches of fiberglass insulation.

The test specimen was a floor assembly and was observed to consist of the following:
All weights and dimension are averaged:

- 1 layer of, according to the client, Loose Lay 7" X 48" 5.0mm x 0.5mm flooring. The flooring was floating on the concrete slab. Measured average thickness: 5.08 mm (0.20 in.). Measured average weight: 9.71 kg/m^2 (1.99 PSF)
- 152.4 mm (6 in.) thick reinforced concrete slab, weighing: 366.2 kg/m^2 (75.00 PSF)
- 1 layer of, 88.9 mm (3-1/2 in.) unfaced fiberglass batt insulation which was laid over the suspended grid system parallel to the main tees. Sample weight: 0.78 kg/m^2 (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 weighed: 11.23 kg/m^2 (2.30 PSF)

The overall weight of the test assembly is: 387.87 kg/m^2 (79.45 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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Normalized impact sound pressure level

Test: ASTM E 492 - 09 (2016) / ASTM E 989 - 18

Test Report: NGC7020120 Date: 7/29/2020
Specimen Size [m²]: 17.8

Source room
Rm Temp [°C]: 25
Humidity [%]: 50

Receiving room
Volume [m³]: 124
Rm Temp [°C]: 25
Humidity [%]: 50

Impact Insulation Class IIC [dB]: 63
Sum of Unfavorable Deviations [dB]: 12
Max. Unfavorable Deviation [dB]: 8 at 2500 Hz

Frequency [Hz]	L_n [dB]	L2 [dB]	d [dB/s]	Corr. [dB]	u.Dev. [dB]	ΔL_n
80	55	55.3	31.03	-0.3		2.32
100	49	49.5	23.98	-0.5		2.48
125	51	54.9	18.42	-3.9	2	1.73
160	49	52.3	15.08	-3.3		1.04
200	48	50.8	14.44	-2.8		0.70
250	46	48.9	16.29	-2.9		0.85
315	46	48.6	15.30	-2.6		0.40
400	44	46.2	16.26	-2.2		0.33
500	41	43.3	17.04	-2.3		0.37
630	39	41.6	18.04	-2.6		0.31
800	34	36.3	18.56	-2.3		0.38
1000	32	34.6	18.11	-2.6		0.38
1250	33	34.6	19.10	-1.6		0.26
1600	33	35.1	20.52	-2.1		0.39
2000	37	37.6	24.13	-0.6	2	0.23
2500	40	40.9	26.47	-0.9	8	0.20
3150	27	28.0	27.74	-1.0		0.62
4000	20	21.3	30.57	-1.3		0.85
5000	14	15.8	34.76	-1.8		0.97

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

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Normalized impact sound pressure level

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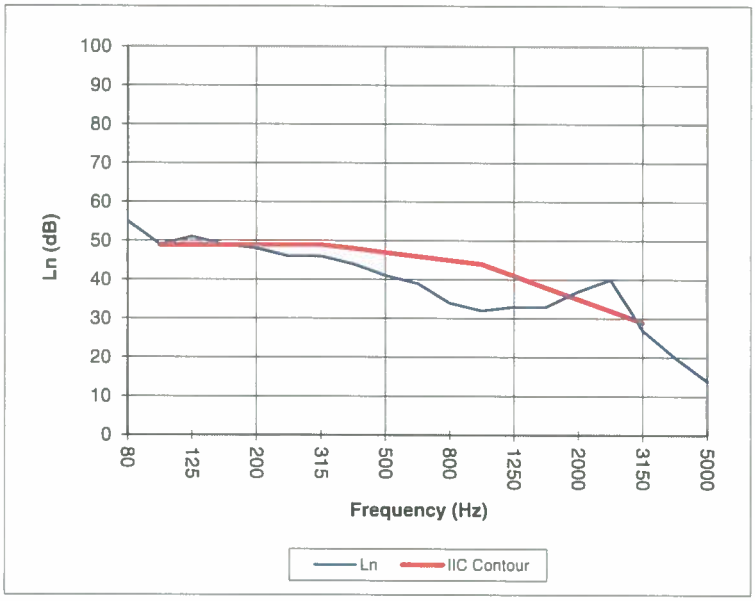
Test Report: NGC7020120
Test Date: 7/29/2020
Specimen Size [m²]: 17.8

Impact Insulation Class IIC [dB]: 63

Frequency [Hz]	L_n [dB]	
80	55	
100	49	
125	51	*
160	49	
200	48	
250	46	
315	46	
400	44	
500	41	
630	39	
800	34	
1000	32	
1250	33	
1600	33	
2000	37	
2500	40	
3150	27	
4000	20	
5000	14	*



* 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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