TEST REPORT

for

Speedfloor Ltd.
16B Ormiston Rd.
Auckland, New Zealand 2016
Hamish Coubray / 64 9 3034825

Impact Sound Transmission Test

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

On

Speedfloor 8" (200mm) Joist Floor-Ceiling Assembly Overlaid with 3-1/2 Inches (90mm) of Normal Weight Concrete, and 3/8" Engineered Wood Flooring over Stock Underlayment with Furring Channel, a Single Layer of 1/2 Inch Type C Gypsum Board

Report Number: NGC 7020094_R1

Assignment Number: G-1631

Test Date: 06/30/2020

Report Reissue Date: 10/02/2020

Submitted by: _____
Anthony J. Rivers
Test Technician

Reviewed by: _____
Robert J. Menichetti
Director

Revision Summary:

Date	SUMMARY
Approval Date: 07/24/2020	Original issue date: 07/24/2020 Original NGCTS report: NGC 7020094
Reissue Date: 10/02/2020	Report #: NGC 7020094_R1 The report was revised to fix a typographical error.

Report Number: NGC 7020094_R1

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: Speedfloor 8" (200mm) Joist floor-ceiling assembly overlaid with, according to client, 3-1/2 Inches (90mm) of Normal Weight concrete, 3/8" Engineered Wood flooring over Stock Underlayment, Furring Channel and a layer of 1/2" Type C gypsum board.

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

- 1 layer of, 3/8" Engineered Wood flooring. The flooring was floating on the stock underlayment. Measured thickness: 9.65 mm (0.38 in.). Measured weight: 5.78 kg/m^2 (1.18 PSF)
- 1 layer of, stock underlayment. The underlayment was floating on the Normal Weight concrete. Measured thickness: 2.29 mm (0.09 in.). Measured weight: 0.78 kg/m^2 (0.16 PSF)
- 1 layer of, 90mm (3-1/2 in.) Normal Weight concrete. Measured weight: 213.59 kg/m^2 (43.75 PSF)
- According to the client, Speedfloor 8" (200mm) joists. Measured weight: 6.01 kg/m^2 (1.23 PSF)
- Furring. The channel was spaced 406.4 mm (16 in.) o.c and was attached perpendicular to the joist. Measured weight of the channel: 0.73 kg/m^2 (0.15 PSF)
- 1 layer of 15.88 mm (5/8 in.) Type C gypsum board. The Gypsum board was attached to the furring channel with 31.8 mm (1-1/4 in.) Type S screws spaced 203.2 mm (8 in.) o.c. Measured weigh: 9.28 kg/m^2 (1.90 PSF)

The overall weight of the test assembly is: 236.14 kg/m^2 (48.37 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: Minimum 24 hours at 70°F, 55% R.H

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: NGC7020094_R1 Date: 6/30/2020
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]: 54

Sum of Unfavorable Deviations [dB]: 28
Max. Unfavorable Deviation [dB]: 8 at 160 Hz

Frequency [Hz]	L_n [dB]	L2 [dB]	d [dB/s]	Corr. [dB]	u.Dev. [dB]	ΔL_n
80	68	68.1	30.29	-0.1		1.42
100	64	64.7	27.12	-0.7	6	2.82
125	63	63.8	24.64	-0.8	5	0.86
160	66	68.3	17.27	-2.3	8	1.81
200	63	65.6	16.16	-2.6	5	0.54
250	60	63.0	16.54	-3.0	2	0.53
315	60	62.7	16.63	-2.7	2	0.37
400	57	59.7	18.28	-2.7		0.65
500	50	51.6	19.22	-1.6		0.44
630	45	46.5	20.54	-1.5		0.52
800	41	42.2	21.22	-1.2		0.43
1000	40	41.7	20.23	-1.7		0.52
1250	35	36.4	20.83	-1.4		0.33
1600	28	29.0	21.71	-1.0		0.31
2000	22	24.1	24.77	-2.1		0.18
2500	26	26.7	27.71	-0.7		0.28
3150	27	26.9	30.67	0.1		0.20
4000	21	21.3	32.93	-0.3		0.27
5000	13	14.2	36.92	-1.2		0.28

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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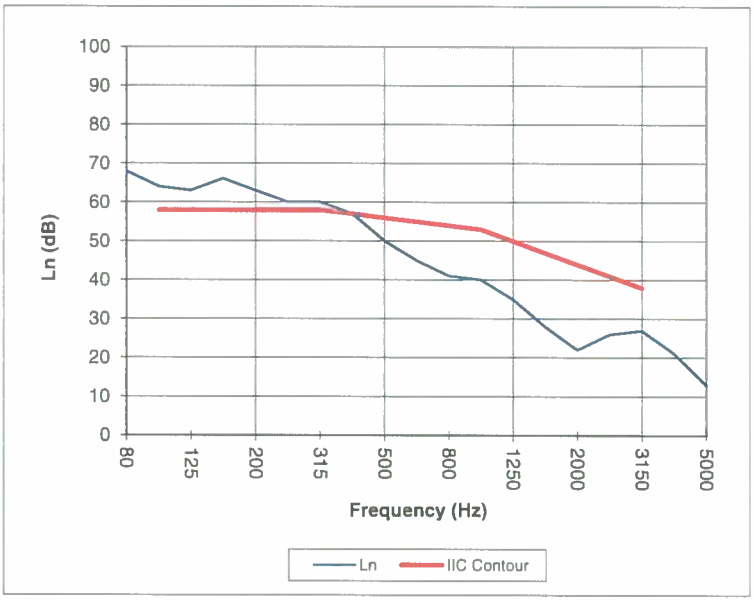
Specimen Size [m²]: 17.8

Impact Insulation Class IIC [dB]: 54

Frequency [Hz]	L_n [dB]
80	68
100	64
125	63
160	66
200	63
250	60
315	60
400	57
500	50
630	45
800	41
1000	40
1250	35
1600	28
2000	22
2500	26
3150	27
4000	21
5000	13 *



* 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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