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 44 oz. Carpet and Foam Rubber Underlayment
with 1.5"x2" Hat Channel, a Single Layer of 1/2 Inch Type C Gypsum Board**

Report Number: NGC 7020074_R1

Assignment Number: G-1631

Test Date: 06/03/2020

Report Reissue Date: 10/02/2020

Submitted by: _____
Anthony J. Rivers
Test Technician

Reviewed by: _____
Robert J. Menchetti
Director

Revision Summary:

Date	SUMMARY
Approval Date: 07/23/2020	Original issue date: 07/23/2020 Original NGCTS report: NGC 7020074
Reissue Date: 10/02/2020	Report #: NGC 7020074_R1 The report was revised to fix a typographical error.

Report Number: NGC 7020074_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, 44 oz. Carpet over Foam Rubber Underlayment, 1.5" x 2" Hat 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 44 oz. Carpet. The carpet was floating on the Foam Rubber underlayment. Measured weight of 2.73 kg/m^2 (0.56 PSF).
- 1 layer of Foam Rubber Underlayment. The underlayment was floating on the Normal Weight concrete. The measured thickness of the underlayment was 9.65 mm (0.38 in.), Measured weight of 2.34 kg/m^2 (0.48 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)
- 1.5" x 2 in. Hat Channel. The channel was spaced 406.4 mm (16 in.) o.c and was attached perpendicular to the joist. Measured weight of the channel: 0.82 kg/m^2 (0.17 PSF)
- 1 layer of 12.70 mm (1/2 in.) Type C gypsum board. The Gypsum board was attached to the Hat 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: 234.78 kg/m^2 (48.09 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: NGC7020074_R1 Date: 6/3/2020
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]: 74

Sum of Unfavorable Deviations [dB]: 14
Max. Unfavorable Deviation [dB]: 8 at 100 Hz

Frequency [Hz]	L_n [dB]	L2 [dB]	d [dB/s]	Corr. [dB]	u.Dev. [dB]	ΔL_n
80	52	52.6	28.34	-0.6		1.46
100	46	46.3	29.71	-0.3	8	2.93
125	42	43.0	23.66	-1.0	4	1.08
160	40	42.0	17.79	-2.0	2	1.60
200	38	40.7	15.99	-2.7		0.84
250	29	32.4	15.32	-3.4		0.69
315	30	32.4	15.99	-2.4		0.55
400	32	34.0	17.68	-2.0		0.70
500	28	29.9	19.77	-1.9		0.59
630	24	26.1	20.56	-2.1		0.50
800	15	17.8	21.61	-2.8		0.45
1000	10	13.8	20.32	-3.8		0.49
1250	10	13.2	20.43	-3.2		0.32
1600	9	12.5	21.46	-3.5		0.63
2000	7	9.7	24.03	-2.7		0.46
2500	6	8.8	26.74	-2.8		0.49
3150	8	10.1	29.65	-2.1		0.59
4000	8	9.5	31.46	-1.5		0.40
5000	8	8.7	36.60	-0.7		0.27

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

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

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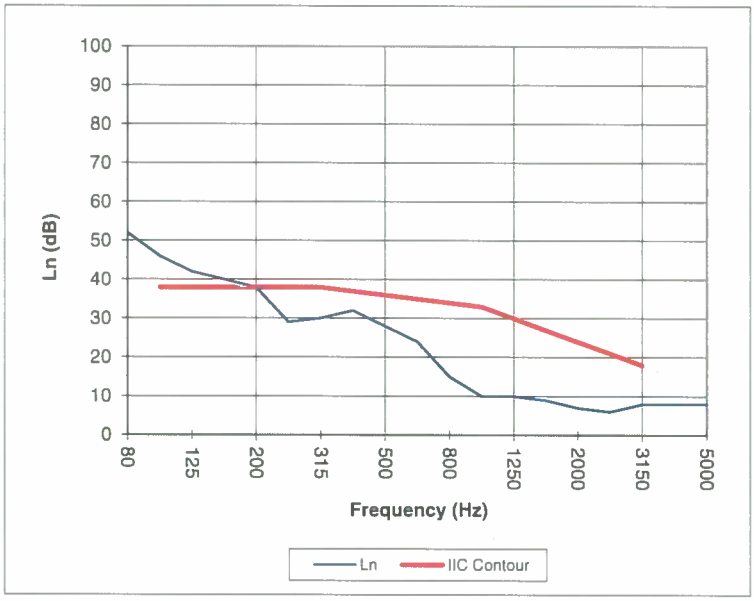
Specimen Size [m²]: 17.8

Impact Insulation Class IIC [dB]: 74

Frequency [Hz]	L_n [dB]	
80	52	
100	46	
125	42	
160	40	
200	38	
250	29	
315	30	
400	32	
500	28	
630	24	
800	15	
1000	10	*
1250	10	*
1600	9	*
2000	7	*
2500	6	*
3150	8	*
4000	8	*
5000	8	*



* 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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