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 Furring Channel, a Single Layer of 1/2 Inch Type C Gypsum Board
and 3 Inches of Mineral Wool Insulation**

Report Number: NGC 7020089_R1

Assignment Number: G-1631

Test Date: 06/16/2020

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: 07/24/2020	Original issue date: 07/24/2020 Original NGCTS report: NGC 7020089
Reissue Date: 10/02/2020	Report #: NGC 7020089_R1 The report was revised to fix a typographical error.

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, Furring Channel and a layer of 1/2" Type C gypsum board, with 3 inches of Mineral wool 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 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 layer of, 76.2 mm (3 in.) Mineral Wool insulation. Sample weight: 3.61 kg/m^2 (0.74 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 12.70 mm (1/2 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: 238.29 kg/m^2 (48.81 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: NGC7020089_R1 Date: 6/16/2020
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]: 80

Sum of Unfavorable Deviations [dB]: 11
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	48	48.1	33.40	-0.1		2.59
100	40	40.3	29.79	-0.3	8	2.51
125	35	36.5	20.62	-1.5	3	1.75
160	32	34.4	16.89	-2.4		1.12
200	28	31.3	15.30	-3.3		0.90
250	22	26.5	15.28	-4.5		0.95
315	24	27.4	16.05	-3.4		0.42
400	27	29.2	17.75	-2.2		0.65
500	25	27.2	19.73	-2.2		0.34
630	19	21.6	20.20	-2.6		0.37
800	13	16.3	21.34	-3.3		0.38
1000	10	14.1	19.63	-4.1		0.73
1250	10	14.1	19.71	-4.1		1.14
1600	11	14.2	21.38	-3.2		1.39
2000	8	11.2	24.65	-3.2		0.76
2500	7	9.8	27.99	-2.8		0.60
3150	9	10.8	29.56	-1.8		0.69
4000	8	9.7	33.22	-1.7		0.50
5000	8	9.0	36.50	-1.0		0.46

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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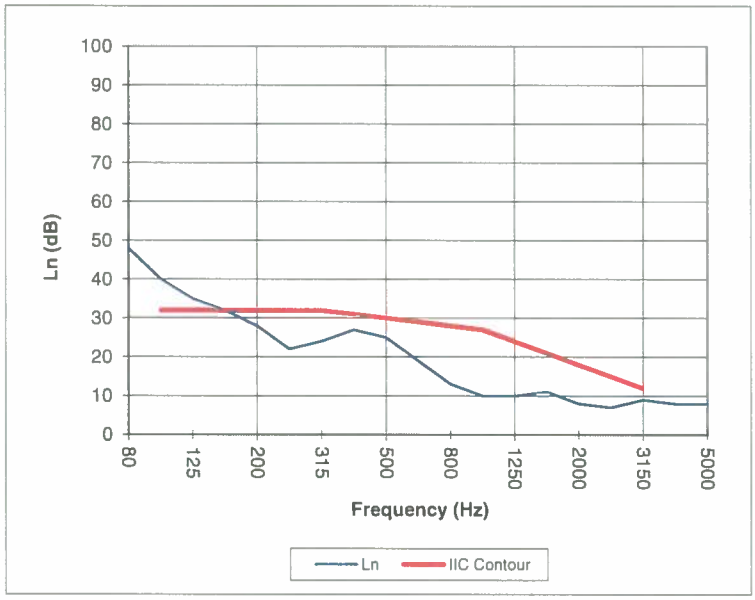
Impact Insulation Class IIC [dB]: 80

Frequency [Hz]	L_n [dB]	
80	48	
100	40	
125	35	
160	32	
200	28	
250	22	
315	24	
400	27	
500	25	
630	19	
800	13	*
1000	10	*
1250	10	*
1600	11	*
2000	8	*
2500	7	*
3150	9	*
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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