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 1.5"x2" Hat Channel, a Single Layer of 1/2 Inch Type C Gypsum Board

Report Number: NGC 7020075_R1

Assignment Number: G-1631

Test Date: 06/04/2020

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 7020075
Reissue Date: 10/02/2020	Report #: NGC 7020075_R1 The report was revised to fix a typographical error.

Report Number: NGC 7020075_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, 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, 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)
- 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: 236.24 kg/m^2 (48.39 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: NGC7020075_R1 Date: 6/4/2020
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]: 30
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
80	66	66.4	27.51	-0.4		1.41
100	65	65.3	29.52	-0.3	7	3.36
125	64	65.0	23.10	-1.0	6	1.12
160	65	67.0	17.53	-2.0	7	1.42
200	63	65.8	15.80	-2.8	5	0.60
250	62	64.5	15.93	-2.5	4	0.50
315	59	61.4	16.58	-2.4	1	0.36
400	55	57.4	17.81	-2.4		0.48
500	48	49.5	19.57	-1.5		0.30
630	46	47.7	20.46	-1.7		0.40
800	41	42.3	21.33	-1.3		0.51
1000	39	40.3	20.26	-1.3		0.49
1250	34	35.7	20.37	-1.7		0.35
1600	25	28.5	21.40	-3.5		0.59
2000	23	26.1	24.28	-3.1		1.58
2500	25	27.5	26.86	-2.5		0.76
3150	24	26.2	30.33	-2.2		1.06
4000	22	23.3	32.31	-1.3		1.78
5000	17	18.2	35.74	-1.2		2.15

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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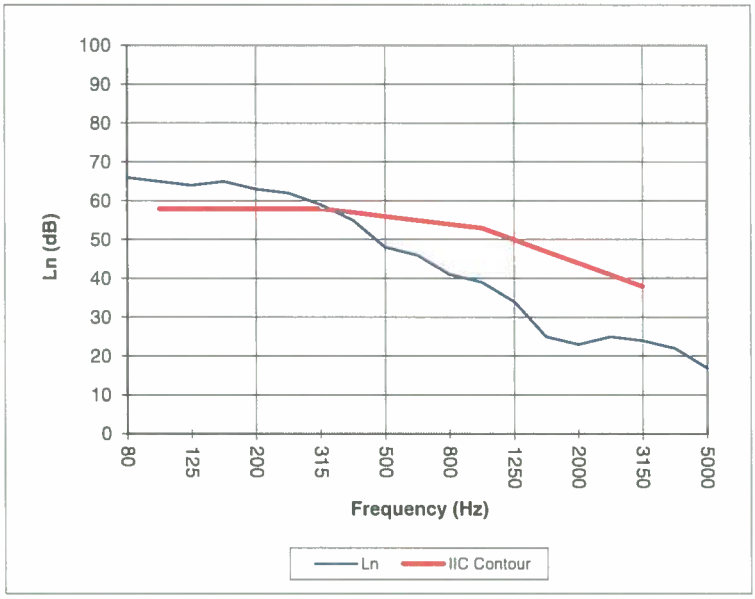
Test Date: 6/4/2020
Specimen Size [m²]: 17.8

Impact Insulation Class IIC [dB]: 54

Frequency [Hz]	L_n [dB]	
80	66	
100	65	
125	64	
160	65	
200	63	
250	62	
315	59	
400	55	
500	48	
630	46	
800	41	
1000	39	
1250	34	
1600	25	*
2000	23	*
2500	25	*
3150	24	*
4000	22	*
5000	17	*



* 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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