

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
and 3 Inches of Mineral Wool Insulation**

Report Number: NGC 7020087_R1

Assignment Number: G-1631

Test Date: 06/16/2020

Report Reissue Date: 10/02/2020

Submitted by:


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Test Technician

Reviewed by:


Robert J. Menchetti
Director

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Revision Summary:

Date	SUMMARY
Approval Date: 07/24/2020	Original issue date: 07/24/2020 Original NGCTS report: NGC 7020087
Reissue Date: 10/02/2020	Report #: NGC 7020087_R1 The report was revised to fix a typographical error.

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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, 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, 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/m² (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/m² (0.16 PSF)
- 1 layer of, 90mm (3-1/2 in.) Normal Weight concrete. Measured weight: 213.59 kg/m² (43.75 PSF)
- According to the client, Speedfloor 8" (200mm) joists. Measured weight: 6.01 kg/m² (1.23 PSF)
- 1 layer of, 76.2 mm (3 in.) Mineral Wool insulation. Sample weight: 3.61 kg/m² (0.74 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/m² (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/m² (1.90 PSF)

The overall weight of the test assembly is: 239.85 kg/m² (49.13 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: NGC7020087_R1					Date: 6/15/2020	
Specimen Size [m ²]: 17.8					Page 4 of 5	
Source room			Receiving room			
Rm Temp [°C]: 25			Volume [m ³]: 124			
Humidity [%]: 50			Rm Temp [°C]: 25			
			Humidity [%]: 50			
Impact Insulation Class IIC [dB]: 56						
Sum of Unfavorable Deviations [dB]: 27						
Max. Unfavorable Deviation [dB]: 5 at 160 Hz						
Frequency	L _n	L ₂	d	Corr.	u.Dev.	ΔL _n
[Hz]	[dB]	[dB]	[dB/s]	[dB]	[dB]	
80	63	62.5	33.89	0.5		2.02
100	60	59.9	32.52	0.1	4	2.22
125	60	60.7	23.51	-0.7	4	0.79
160	61	63.4	17.61	-2.4	5	1.15
200	60	62.6	15.88	-2.6	4	0.79
250	61	63.7	16.73	-2.7	5	1.27
315	59	61.9	17.19	-2.9	3	0.38
400	57	59.5	18.29	-2.5	2	0.42
500	50	51.9	19.80	-1.9		0.23
630	46	47.7	20.32	-1.7		0.48
800	41	42.2	21.25	-1.2		0.59
1000	37	38.8	20.38	-1.8		0.44
1250	31	33.9	20.63	-2.9		0.39
1600	24	27.0	21.77	-3.0		0.52
2000	23	26.4	24.70	-3.4		0.86
2500	24	26.4	27.42	-2.4		0.55
3150	23	25.3	30.34	-2.3		0.64
4000	21	22.8	32.72	-1.8		0.89
5000	17	18.2	36.92	-1.2		1.02

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

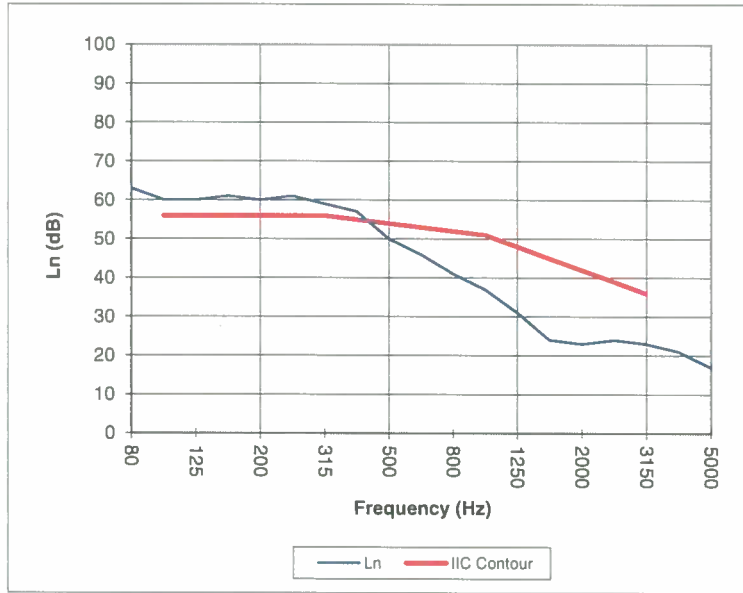
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 Test Date: 6/15/2020
 Specimen Size [m²]: 17.8

Impact Insulation Class IIC [dB]: 56

Frequency [Hz]	L _n [dB]
80	63
100	60
125	60
160	61
200	60
250	61
315	59
400	57
500	50
630	46
800	41
1000	37
1250	31
1600	24
2000	23
2500	24
3150	23
4000	21
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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