

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
and 3 Inches of Mineral Wool Insulation**

Report Number: NGC 7020088_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

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Revision Summary:

Date	SUMMARY
Approval Date: 07/24/2020	Original issue date: 07/24/2020 Original NGCTS report: NGC 7020088
Reissue Date: 10/02/2020	Report #: NGC 7020088_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, 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, 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)
- 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/m² (0.15 PSF)
- 1 layer of, 76.2 mm (3 in.) Mineral Wool insulation. Sample weight: 3.61 kg/m² (0.74 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/m² (1.90 PSF)

The overall weight of the test assembly is: 239.76 kg/m² (49.11 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: NGC7020088_R1				Date: 6/16/2020		
Specimen Size [m²]: 17.8				Page 4 of 5		
Source room			Receiving room			
Rm Temp [°C]: 25			Volume [m³]: 124			
Humidity [%]: 50			Rm Temp [°C]: 25			
			Humidity [%]: 50			
Impact Insulation Class IIC [dB]: 60						
Sum of Unfavorable Deviations [dB]: 27						
Max. Unfavorable Deviation [dB]: 5			at 100 Hz			
Frequency [Hz]	L _n [dB]	L2 [dB]	d [dB/s]	Corr. [dB]	u.Dev. [dB]	ΔL _n
80	63	62.4	32.71	0.6		2.66
100	57	57.1	30.07	-0.1	5	2.59
125	56	58.0	20.60	-2.0	4	0.82
160	57	59.2	16.32	-2.2	5	1.15
200	55	57.9	15.90	-2.9	3	0.59
250	56	58.4	15.68	-2.4	4	0.49
315	55	57.9	16.16	-2.9	3	0.38
400	54	56.2	18.30	-2.2	3	0.76
500	47	49.3	19.16	-2.3		0.44
630	42	43.4	19.96	-1.4		0.42
800	39	40.4	20.80	-1.4		0.48
1000	36	38.1	19.86	-2.1		0.63
1250	32	34.0	20.11	-2.0		0.75
1600	27	29.2	21.41	-2.2		1.95
2000	28	30.3	24.40	-2.3		2.92
2500	28	28.8	27.20	-0.8		2.05
3150	28	29.1	30.40	-1.1		2.46
4000	27	27.4	33.08	-0.4		3.36
5000	22	22.6	37.11	-0.6		3.58

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

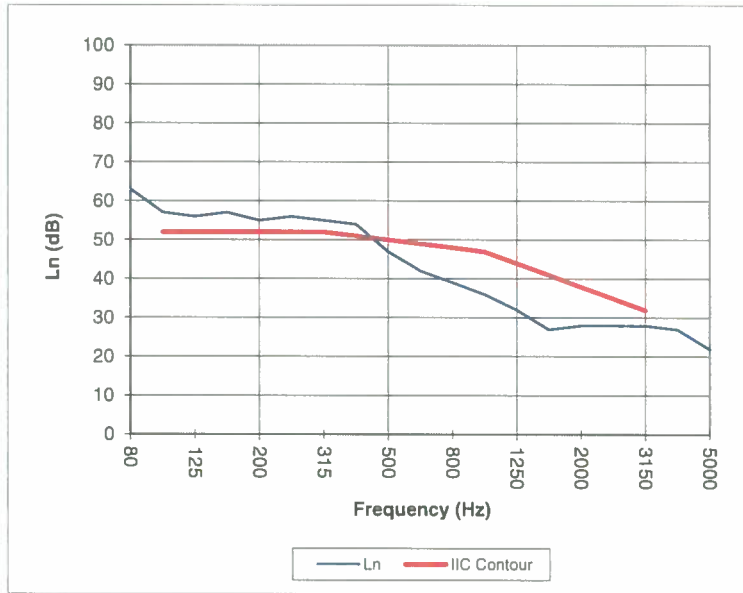
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 Test Date: 6/16/2020
 Specimen Size [m²]: 17.8

Impact Insulation Class IIC [dB]: 60

Frequency [Hz]	L _n [dB]
80	63
100	57
125	56
160	57
200	55
250	56
315	55
400	54
500	47
630	42
800	39
1000	36
1250	32
1600	27
2000	28
2500	28
3150	28
4000	27
5000	22



* 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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