

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 Porcelain Tile over 6mm AcoustiCork Underlayment
1.5"x2" Hat Channel, a Single Layer of 1/2 Inch Type C Gypsum Board
With 3 Inches of Mineral Wool Insulation**

Report Number: NGC 7020085_R1

Assignment Number: G-1631

Test Date: 06/15/2020

Report Reissue Date: 10/02/2020

Submitted by:


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Test Technician

Reviewed by:


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Revision Summary:

| Date | SUMMARY |
|---------------------------|---|
| Approval Date: 07/24/2020 | Original issue date: 07/24/2020 Original NGCTS report: NGC 7020085 |
| Reissue Date: 10/02/2020 | Report #: NGC 7020085_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, Porcelain Tile over 6mm AcoustiCork 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, Porcelain Tile. The tile was adhered to the 6mm AcoustiCork underlayment using thin set mortar, and grouted with Spectralock Pro Grout. Measured thickness: 8.89 mm (0.35 in.). Measured weight: 19.43 kg/m² (3.98 PSF)
- 1 layer of, 6mm AcoustiCork underlayment. The underlayment was adhered to the concrete slab using Mapei Ultrabond ECO350 adhesive. The adhesive was applied using a 0.06 mm x 0.06 mm x 0.03 mm (1/16 in. x 1/16 in. x 1/16 in.) Square-Notch Trowel. Measured thickness: 6.10 mm (0.24 in.). Measured weight: 1.17 kg/m² (0.24 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: 253.91 kg/m² (52.01 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 | | | | | | |
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| Specimen Size [m ²]: 17.8 | | | | | Date: 6/11/2020 | |
| Source room | | | Receiving room | | | |
| Rm Temp [°C]: 22 | | | Volume [m ³]: 124 | | | |
| Humidity [%]: 55 | | | Rm Temp [°C]: 22 | | | |
| | | | Humidity [%]: 66 | | | |
| Impact Insulation Class IIC [dB]: 53 | | | | | | |
| Sum of Unfavorable Deviations [dB]: 30 | | | | | | |
| Max. Unfavorable Deviation [dB]: 6 | | | at 400 Hz | | | |
| Frequency | L _n | L2 | d | Corr. | u.Dev. | ΔL _n |
| [Hz] | [dB] | [dB] | [dB/s] | [dB] | [dB] | |
| 80 | 63 | 62.9 | 32.99 | 0.1 | | 2.18 |
| 100 | 59 | 58.1 | 33.38 | 0.9 | | 1.56 |
| 125 | 59 | 60.5 | 23.10 | -1.5 | | 0.97 |
| 160 | 61 | 63.1 | 17.85 | -2.1 | 2 | 0.78 |
| 200 | 60 | 62.8 | 16.36 | -2.8 | 1 | 0.81 |
| 250 | 62 | 64.3 | 16.44 | -2.3 | 3 | 0.71 |
| 315 | 63 | 65.7 | 16.61 | -2.7 | 4 | 0.38 |
| 400 | 64 | 66.2 | 17.90 | -2.2 | 6 | 0.60 |
| 500 | 60 | 61.8 | 19.77 | -1.8 | 3 | 0.41 |
| 630 | 58 | 60.1 | 20.46 | -2.1 | 2 | 0.48 |
| 800 | 56 | 57.1 | 21.59 | -1.1 | 1 | 0.45 |
| 1000 | 55 | 56.9 | 20.36 | -1.9 | 1 | 0.50 |
| 1250 | 51 | 52.8 | 20.67 | -1.8 | | 0.39 |
| 1600 | 44 | 45.8 | 21.88 | -1.8 | | 0.49 |
| 2000 | 42 | 42.4 | 24.69 | -0.4 | | 0.55 |
| 2500 | 44 | 44.1 | 27.51 | -0.1 | 2 | 0.39 |
| 3150 | 44 | 43.7 | 29.91 | 0.3 | 5 | 0.49 |
| 4000 | 39 | 38.8 | 33.25 | 0.2 | | 0.88 |
| 5000 | 30 | 29.4 | 36.31 | 0.6 | | 0.63 |

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

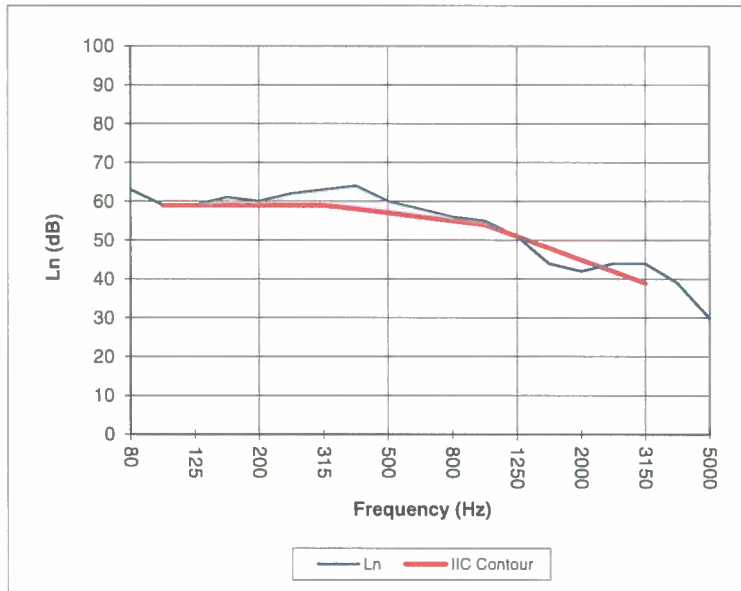
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Test Report: NGC7020085_R1
 Test Date: 6/11/2020
 Specimen Size [m²]: 17.8

Impact Insulation Class IIC [dB]: 53

| Frequency [Hz] | L _n [dB] |
|-------------------|------------------------|
| 80 | 63 |
| 100 | 59 |
| 125 | 59 |
| 160 | 61 |
| 200 | 60 |
| 250 | 62 |
| 315 | 63 |
| 400 | 64 |
| 500 | 60 |
| 630 | 58 |
| 800 | 56 |
| 1000 | 55 |
| 1250 | 51 |
| 1600 | 44 |
| 2000 | 42 |
| 2500 | 44 |
| 3150 | 44 |
| 4000 | 39 |
| 5000 | 30 |



* 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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