TEST REPORT

for

Speedfloor Ltd.
16B Ormiston Rd.
Auckland, New Zealand 2016
Hamish Coubray / 64 9 3034825

Sound Transmission Loss Test

ASTM E 90 – 09 (2016) / E 413 – 16

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

Report Number: NGC 5020075_R1

Assignment Number: G-1631

Test Date: 06/25/2020

Report Reissue Date: 10/05/2020

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 5020075
Reissue Date: 10/05/2020	Report #: NGC 5020075_R1 The report was revised to fix a typographical error.

Report Number: NGC 5020075_R1

Test Method: This test method conforms explicitly with the American Society for Testing and Materials Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions

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, 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, 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/m^2 (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/m^2 (0.24 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 channel. The channel was spaced 406.4 mm (16 in.) o.c and was attached perpendicular to the joist. Measured weight of the channel: 0.73 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: 253.82 kg/m^2 (51.99 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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Sound Transmission Loss Test Data

Test: ASTM E 90 - 09 (2016) / ASTM E 413 - 16

Test Report: NGC 5020075_R1 Date: 6/25/2020
Specimen Size [m²]: 17.8

Source room		Receiving room	
Volume [m³]:	86	Volume [m³]:	124
Rm Temp [°C]:	25	Rm Temp [°C]:	25
Humidity [%]:	50	Humidity [%]:	50

Sound Transmission Class STC [dB]: 57
Sum of Unfavorable Deviations [dB]: 29
Max. Unfavorable Deviation [dB]: 7 at 400 Hz

Frequency [Hz]	STL [dB]	L1 [dB]	L2 [dB]	d [dB/s]	Corr. [dB]	u.Dev. [dB]	ΔSTL
80	38	100.4	64.2	32.2	1.8		1.91
100	42	103.0	63.6	30.9	2.6		4.69
125	36	102.9	70.9	22.0	4.0	5	0.90
160	44	105.3	66.1	17.6	4.8		1.40
200	44	105.4	66.3	16.3	4.9	3	0.52
250	45	102.6	62.2	16.8	4.6	5	1.97
315	47	100.1	57.8	16.8	4.7	6	0.90
400	49	98.9	54.7	18.5	4.8	7	0.48
500	54	100.1	50.9	19.8	4.8	3	0.62
630	58	100.9	47.6	20.3	4.6		0.72
800	61	100.0	42.7	21.2	3.7		0.31
1000	64	97.4	37.8	19.9	4.5		0.59
1250	68	96.3	32.3	20.3	4.0		0.57
1600	73	96.7	28.1	21.5	4.5		0.59
2000	75	98.7	27.4	24.4	3.7		0.68
2500	74	99.8	28.3	27.6	2.6		1.04
3150	76	99.0	25.2	30.7	2.2		1.26
4000	79	96.5	20.1	33.3	2.6		1.64
5000	81	90.2	10.9	37.3	1.7		1.63

STL = Sound Transmission Loss, dB
L1 = Source Room Level, dB
L2 = Receiving Room Level, dB
d = Decay Rate dB/second
Δ STL = Uncertainty for 95% Confidence Level

1650 Military Road • Buffalo, NY 14217-1198
(716) 873-9750 • Fax (716) 873-9753 • www.ngctestingservices.com

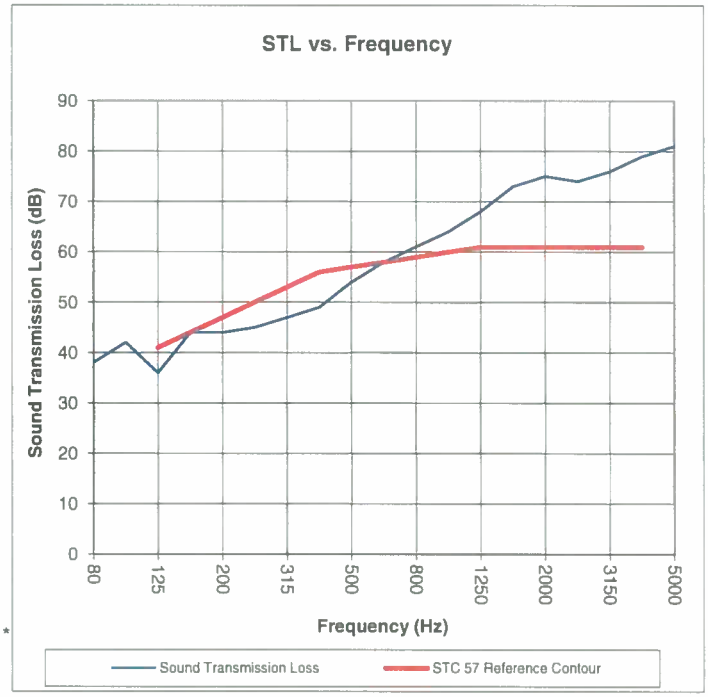
Sound Transmission Loss Test Data

Test: ASTM E 90 - 09 (2016) / ASTM E 413 - 16

Test Report: NGC 5020075_R1
Test Date: 6/25/2020
Specimen Size [m²]: 17.8

Sound Transmission Class STC = 57 dB

Frequency [Hz]	STL [dB]	ΔSTL
80	38	1.91
100	42	4.69
125	36	0.90
160	44	1.40
200	44	0.52
250	45	1.97
315	47	0.90
400	49	0.48
500	54	0.62
630	58	0.72
800	61	0.31
1000	64	0.59
1250	68	0.57
1600	73	0.59
2000	75	0.68
2500	74	1.04
3150	76	1.26
4000	79	1.64
5000	81	1.63



* Due to high insulating value of specimen, background levels limit results at these frequencies.

STL = Sound Transmission Loss, dB
Δ STL = Uncertainty for 95% Confidence Level