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 44 oz. Carpet and Foam Rubber 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 5020073_R1

Assignment Number: G-1631

Test Date: 06/16/2020

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 5020073
Reissue Date: 10/05/2020	Report #: NGC 5020073_R1 The report was revised to fix a typographical error.

Report Number: NGC 5020073_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, 44 oz. Carpet over Foam Rubber 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 44 oz. Carpet. The carpet was floating on the Foam Rubber underlayment. Measured weight of 2.73 kg/m^2 (0.56 PSF).
- 1 layer of Foam Rubber Underlayment. The underlayment was floating on the Normal Weight concrete. The measured thickness of the underlayment was 9.65 mm (0.38 in.), Measured weight of 2.34 kg/m^2 (0.48 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. 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: 238.29 kg/m^2 (48.81 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 5020073_R1 Date: 6/16/2020
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]: 58

Sum of Unfavorable Deviations [dB]: 28
Max. Unfavorable Deviation [dB]: 6 at 315 Hz

Frequency [Hz]	STL [dB]	L1 [dB]	L2 [dB]	d [dB/s]	Corr. [dB]	u.Dev. [dB]	ΔSTL
80	39	99.0	61.9	32.8	1.9		2.75
100	37	99.2	64.8	30.2	2.6		2.37
125	39	102.9	67.9	20.9	4.0	3	1.15
160	45	104.3	64.6	17.4	5.3		2.26
200	48	101.3	58.9	15.8	5.6		1.44
250	47	97.1	55.8	16.1	5.7	4	1.54
315	48	94.7	52.3	16.6	5.6	6	0.81
400	52	95.1	47.9	18.4	4.8	5	1.46
500	55	95.2	44.5	18.9	4.3	3	1.92
630	58	94.9	41.2	20.1	4.3	1	1.36
800	61	93.5	36.8	20.8	4.3		1.20
1000	60	90.1	34.1	19.7	4.0	1	1.68
1250	61	88.8	31.7	20.1	3.8	1	2.91
1600	61	89.2	32.5	21.3	4.3	1	3.15
2000	60	91.5	35.0	24.3	3.5	2	3.82
2500	63	93.0	32.8	27.4	2.8		4.44
3150	61	92.5	33.7	30.5	2.2	1	4.81
4000	61	90.9	32.0	32.8	2.1	1	5.06
5000	58	84.0	27.2	36.8	1.2		5.18

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

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Sound Transmission Loss Test Data

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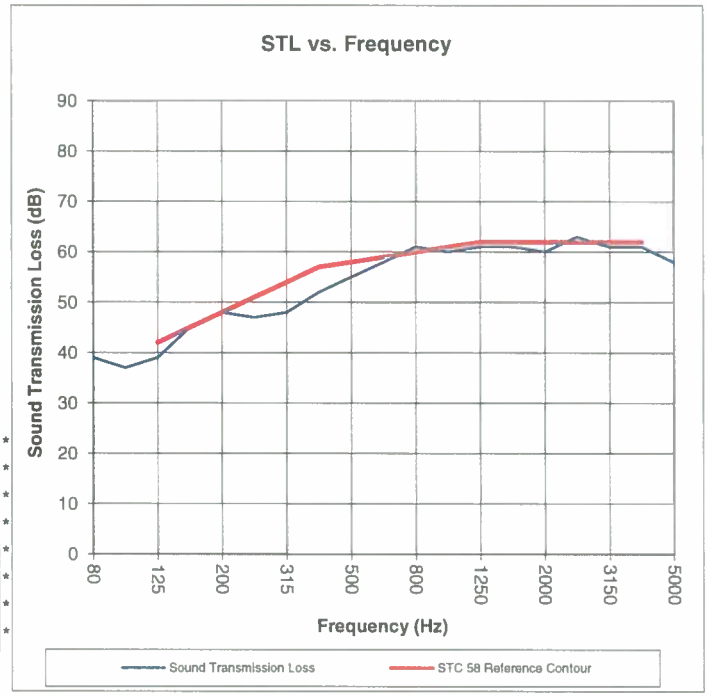
Test Report: NGC 5020073_R1
Test Date: 6/16/2020
Specimen Size [m²]: 17.8

Sound Transmission Class STC = 58 dB

Frequency [Hz]	STL [dB]	ΔSTL	
80	39	2.75	
100	37	2.37	
125	39	1.15	
160	45	2.26	
200	48	1.44	
250	47	1.54	
315	48	0.81	
400	52	1.46	
500	55	1.92	
630	58	1.36	
800	61	1.20	
1000	60	1.68	*
1250	61	2.91	*
1600	61	3.15	*
2000	60	3.82	*
2500	63	4.44	*
3150	61	4.81	*
4000	61	5.06	*
5000	58	5.18	*



* 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

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