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 1.5"x2" Hat Channel, a Single Layer of 1/2 Inch Type C Gypsum Board

Report Number: NGC 5020062_R1

Assignment Number: G-1631

Test Date: 06/02/2020

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: 07/23/2020	Original issue date: 07/23/2020 Original NGCTS report: NGC 5020062
Reissue Date: 10/05/2020	Report #: NGC 5020062_R1 The report was revised to fix a typographical error.

Report Number: NGC 5020062_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, 1.5" x 2" Hat Channel and a layer of 1/2" Type C gypsum board.

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)
- 1.5" 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/m^2 (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/m^2 (1.90 PSF)

The overall weight of the test assembly is: 250.30 kg/m^2 (51.27 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 5020062_R1 Date: 6/2/2020
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]: 54
Sum of Unfavorable Deviations [dB]: 31
Max. Unfavorable Deviation [dB]: 7 at 160 Hz

Frequency [Hz]	STL [dB]	L1 [dB]	L2 [dB]	d [dB/s]	Corr. [dB]	u.Dev. [dB]	ΔSTL
80	42	103.2	64.3	29.3	3.1		3.70
100	34	103.7	72.9	28.1	3.3		4.49
125	32	103.7	76.0	21.4	4.3	6	1.87
160	34	102.6	73.6	18.0	5.0	7	1.36
200	42	104.9	68.5	15.3	5.7	2	0.88
250	44	101.2	62.7	15.8	5.5	3	1.28
315	45	100.7	60.8	16.3	5.1	5	0.27
400	47	98.8	57.1	17.7	5.3	6	0.57
500	52	100.0	52.6	19.1	4.6	2	0.66
630	55	101.3	50.6	20.5	4.3		0.50
800	59	100.4	45.8	21.4	4.4		0.61
1000	61	97.8	41.5	20.1	4.7		0.76
1250	66	95.8	34.5	20.4	4.7		0.62
1600	70	96.3	30.1	21.4	3.8		0.74
2000	73	98.5	29.0	24.4	3.5		0.96
2500	72	99.6	30.3	27.0	2.7		1.09
3150	75	99.4	26.9	30.0	2.5		1.49
4000	77	96.7	21.6	32.9	1.9		2.00
5000	80	90.0	11.8	36.2	1.8		2.05

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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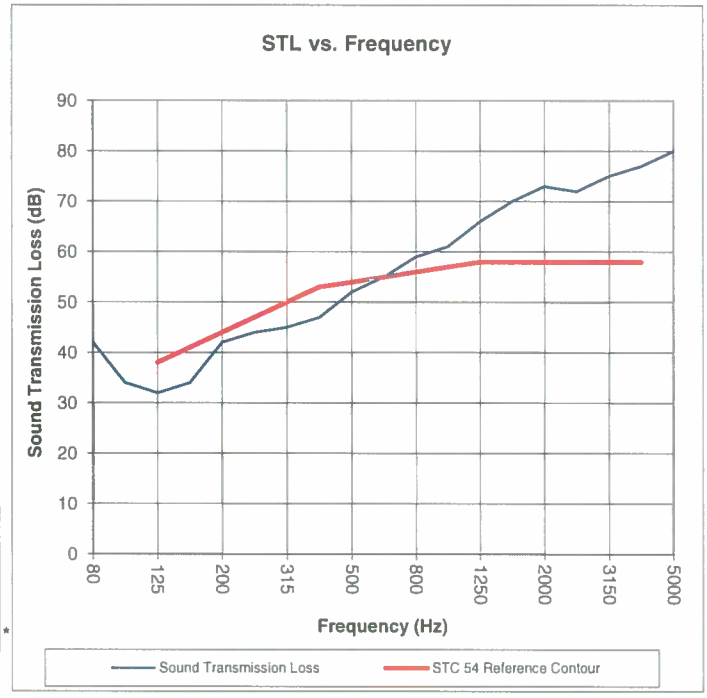
Test Date: 6/2/2020
Specimen Size [m²]: 17.8

Sound Transmission Class STC = 54 dB

Frequency [Hz]	STL [dB]	ΔSTL	
80	42	3.70	
100	34	4.49	
125	32	1.87	
160	34	1.36	
200	42	0.88	
250	44	1.28	
315	45	0.27	
400	47	0.57	
500	52	0.66	
630	55	0.50	
800	59	0.61	
1000	61	0.76	
1250	66	0.62	
1600	70	0.74	
2000	73	0.96	
2500	72	1.09	
3150	75	1.49	
4000	77	2.00	
5000	80	2.05	*



* 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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