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
With 3 Inches of Mineral Wool Insulation**

Report Number: NGC 5020069_R1

Assignment Number: G-1631

Test Date: 06/15/2020

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 5020069
Reissue Date: 10/05/2020	Report #: NGC 5020069_R1 The report was revised to fix a typographical error.

Report Number: NGC 5020069_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, 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)
- 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: 253.91 kg/m^2 (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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Sound Transmission Loss Test Data

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

Test Report: NGC 5020069_R1 Date: 6/11/2020
Specimen Size [m²]: 17.8

Source room		Receiving room	
Volume [m³]:	86	Volume [m³]:	128
Rm Temp [°C]:	20	Rm Temp [°C]:	22
Humidity [%]:	54	Humidity [%]:	66

Sound Transmission Class STC [dB]: 56

Sum of Unfavorable Deviations [dB]: 28
Max. Unfavorable Deviation [dB]: 7 at 315 Hz

Frequency [Hz]	STL [dB]	L1 [dB]	L2 [dB]	d [dB/s]	Corr. [dB]	u.Dev. [dB]	ΔSTL
80	35	99.6	67.2	29.3	2.7		2.95
100	39	100.8	64.5	30.6	2.7		4.81
125	36	103.0	70.5	23.0	3.5	4	1.80
160	44	104.5	65.6	17.3	5.1		1.53
200	43	104.0	65.7	17.2	4.7	3	0.86
250	47	102.4	60.6	16.4	5.2	2	1.28
315	45	99.1	59.1	16.9	5.0	7	1.12
400	48	98.9	55.2	18.5	4.4	7	0.90
500	52	98.8	51.1	19.0	4.2	4	1.13
630	56	99.6	47.9	20.6	4.2	1	0.66
800	60	98.7	42.8	21.6	4.0		0.49
1000	62	96.5	38.3	20.3	3.9		0.46
1250	67	95.0	32.4	20.8	4.4		0.29
1600	71	94.9	27.9	22.1	3.9		0.50
2000	73	97.3	27.5	24.4	3.3		0.55
2500	73	98.5	28.7	27.2	3.2		0.77
3150	75	97.5	24.6	30.2	2.1		0.89
4000	78	95.0	19.4	33.4	2.4		1.23
5000	76	87.9	13.2	37.0	1.2		1.29

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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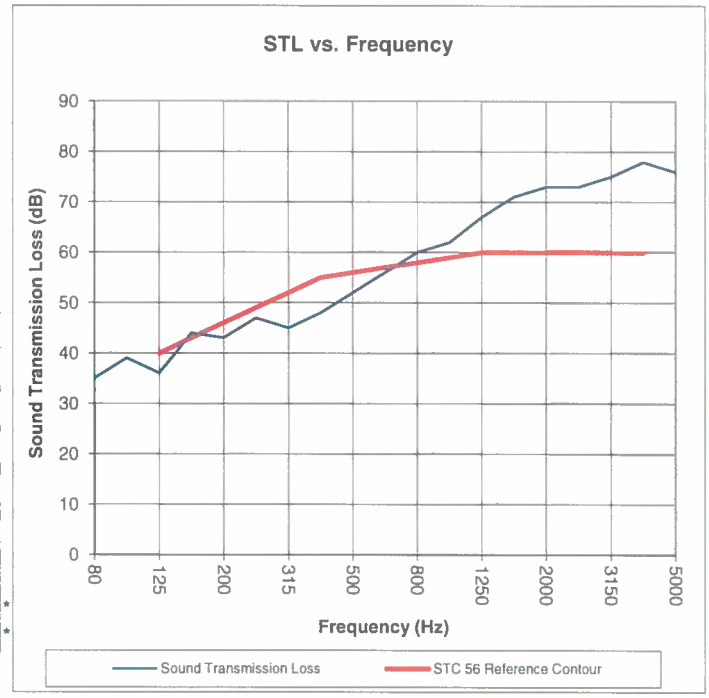
Sound Transmission Loss Test Data

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

Test Report: NGC 5020069_R1
Test Date: 6/11/2020
Specimen Size [m²]: 17.8

Sound Transmission Class STC = 56 dB

Frequency [Hz]	STL [dB]	ΔSTL	
80	35	2.95	
100	39	4.81	
125	36	1.80	
160	44	1.53	
200	43	0.86	
250	47	1.28	
315	45	1.12	
400	48	0.90	
500	52	1.13	
630	56	0.66	
800	60	0.49	
1000	62	0.46	
1250	67	0.29	
1600	71	0.50	
2000	73	0.55	
2500	73	0.77	
3150	75	0.89	
4000	78	1.23	*
5000	76	1.29	*



* 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