

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**

Report Number: NGC 5020077_R1

Assignment Number: G-1631

Test Date: 06/29/2020

Report Reissue Date: 10/05/2020

Submitted by:


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Test Technician

Reviewed by:


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Director

The results reported above apply to specific samples submitted for measurement. No responsibility is assumed for performance of any other specimen. The laboratory's accreditation or any of its test reports in no way constitute or imply product certification, approval, or endorsement by NVLAP, NIST or any agency of the Federal Government. This report may not be reproduced except in full, without written approval of the laboratory.

Revision Summary:

Date	SUMMARY
Approval Date: 07/24/2020	Original issue date: 07/24/2020 Original NGCTS report: NGC 5020077
Reissue Date: 10/05/2020	Report #: NGC 5020077_R1 The report was revised to fix a typographical error.

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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.

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/m² (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/m² (0.48 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)
- 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/m² (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/m² (1.90 PSF)

The overall weight of the test assembly is: 234.68 kg/m² (48.07 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 5020077_R1				Date: 6/29/2020			
Specimen Size [m ²]: 17.8				Page 4 of 5			
Source room				Receiving room			
Volume [m ³]: 86				Volume [m ³]: 124			
Rm Temp [°C]: 25				Rm Temp [°C]: 25			
Humidity [%]: 50				Humidity [%]: 50			
Sound Transmission Class STC [dB]: 52							
Sum of Unfavorable Deviations [dB]: 12							
Max. Unfavorable Deviation [dB]: 8 at 125 Hz							
Frequency [Hz]	STL [dB]	L1 [dB]	L2 [dB]	d [dB/s]	Corr. [dB]	u.Dev. [dB]	ΔSTL
80	35	100.9	68.5	31.2	2.5		2.26
100	27	103.0	79.6	25.9	3.6		5.65
125	28	102.3	77.8	21.3	3.6	8	1.01
160	36	104.5	73.2	16.6	4.8	3	2.20
200	42	104.2	67.1	16.1	4.9		0.85
250	45	100.4	60.6	15.7	5.2		2.15
315	48	97.9	55.6	16.0	5.7		0.99
400	50	96.1	51.1	18.0	5.0	1	0.67
500	54	96.5	46.7	18.8	4.2		1.61
630	57	96.9	44.0	20.3	4.2		0.86
800	60	95.8	40.0	21.4	4.2		1.35
1000	59	92.0	37.2	20.1	4.2		1.45
1250	65	91.5	30.7	20.3	4.1		1.30
1600	71	91.7	24.5	21.6	3.8		1.16
2000	75	94.6	22.6	24.7	2.9		1.92
2500	75	95.8	23.4	27.7	2.6		2.70
3150	77	95.4	21.1	30.4	2.7		3.18
4000	79	93.6	16.7	33.1	2.0		3.52
5000	77	86.8	11.0	36.6	1.2		3.94

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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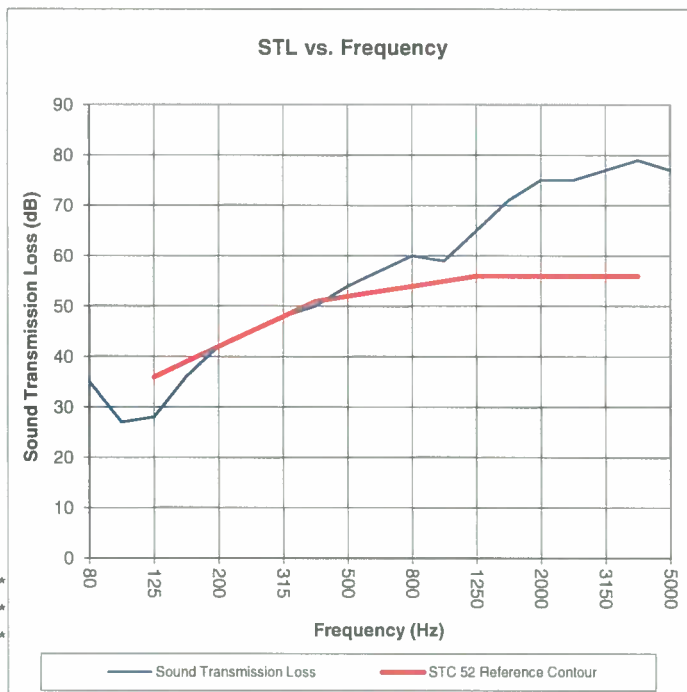
Sound Transmission Loss Test Data

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

Test Report: NGC 5020077_R1
 Test Date: 6/29/2020
 Specimen Size [m²]: 17.8

Sound Transmission Class STC = 52 dB

Frequency [Hz]	STL [dB]	ΔSTL
80	35	2.26
100	27	5.65
125	28	1.01
160	36	2.20
200	42	0.85
250	45	2.15
315	48	0.99
400	50	0.67
500	54	1.61
630	57	0.86
800	60	1.35
1000	59	1.45
1250	65	1.30
1600	71	1.16
2000	75	1.92
2500	75	2.70
3150	77	3.18
4000	79	3.52
5000	77	3.94



* 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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