

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 3/8” Engineered Wood Flooring over Stock Underlayment
with Furring Channel, a Single Layer of 1/2 Inch Type C Gypsum Board**

Report Number: NGC 5020078_R1

Assignment Number: G-1631

Test Date: 06/30/2020

Report Reissue Date: 10/05/2020

Submitted by:



Anthony J. Rivers
Test Technician

Reviewed by:



Robert J. Menchetti
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 5020078
Reissue Date: 10/05/2020	Report #: NGC 5020078_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, 3/8" Engineered Wood flooring over Stock 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, 3/8" Engineered Wood flooring. The flooring was floating on the stock underlayment. Measured thickness: 9.65 mm (0.38 in.). Measured weight: 5.78 kg/m² (1.18 PSF)
- 1 layer of, stock underlayment. The underlayment was floating on the Normal Weight concrete. Measured thickness: 2.29 mm (0.09 in.). Measured weight: 0.78 kg/m² (0.16 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 15.88 mm (5/8 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/m² (1.90 PSF)

The overall weight of the test assembly is: 236.14 kg/m² (48.37 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

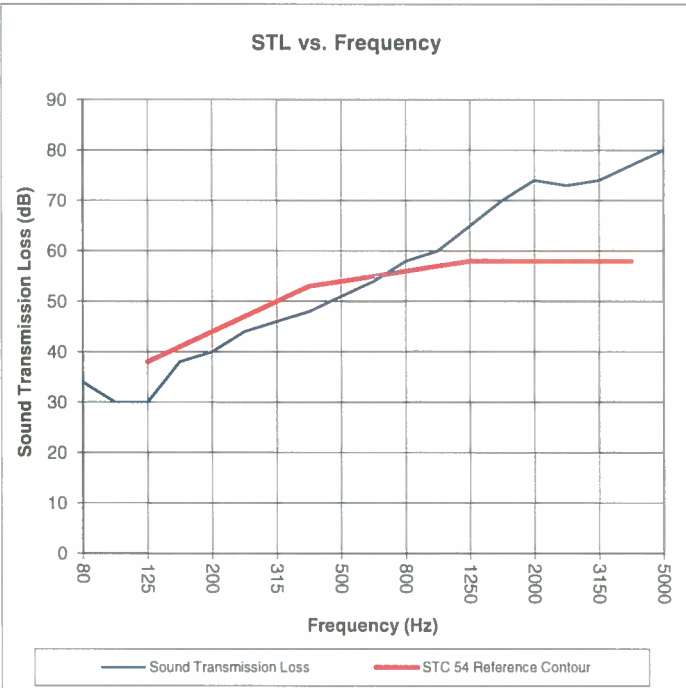
Test Results: The results of the tests are given on pages 4 and 5 of the report.

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Sound Transmission Loss Test Data							
Test: ASTM E 90 - 09 (2016) / ASTM E 413 - 16							
Test Report: NGC 5020078_R1						Date: 6/30/2020	
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]: 54							
Sum of Unfavorable Deviations [dB]: 31							
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	34	100.8	69.2	29.7	2.4		2.26
100	30	103.4	76.3	26.3	2.9		6.04
125	30	103.1	77.2	23.1	4.2	8	1.15
160	38	105.3	71.7	17.7	4.4	3	1.73
200	40	105.0	69.7	17.1	4.7	4	0.98
250	44	101.6	62.8	16.6	5.2	3	1.37
315	46	99.9	58.6	16.5	4.7	4	0.65
400	48	98.1	55.1	18.2	5.0	5	0.47
500	51	98.6	51.7	19.4	4.1	3	1.04
630	54	98.2	48.0	20.2	3.8	1	1.09
800	58	97.8	43.5	21.1	3.7		0.70
1000	60	96.3	41.1	20.0	4.8		1.34
1250	65	95.6	35.3	20.3	4.6		0.65
1600	70	95.3	29.2	21.4	3.9		0.75
2000	74	98.0	27.8	24.2	3.9		0.90
2500	73	99.4	29.0	27.7	2.6		1.34
3150	74	98.4	26.5	30.5	2.1		1.33
4000	77	96.0	20.9	33.6	1.9		1.91
5000	80	88.9	10.8	36.7	1.8		1.97

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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<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Frequency [Hz]</th> <th style="text-align: center;">STL [dB]</th> <th style="text-align: center;">ΔSTL</th> </tr> </thead> <tbody> <tr><td>80</td><td>34</td><td>2.26</td></tr> <tr><td>100</td><td>30</td><td>6.04</td></tr> <tr><td>125</td><td>30</td><td>1.15</td></tr> <tr><td>160</td><td>38</td><td>1.73</td></tr> <tr><td>200</td><td>40</td><td>0.98</td></tr> <tr><td>250</td><td>44</td><td>1.37</td></tr> <tr><td>315</td><td>46</td><td>0.65</td></tr> <tr><td>400</td><td>48</td><td>0.47</td></tr> <tr><td>500</td><td>51</td><td>1.04</td></tr> <tr><td>630</td><td>54</td><td>1.09</td></tr> <tr><td>800</td><td>58</td><td>0.70</td></tr> <tr><td>1000</td><td>60</td><td>1.34</td></tr> <tr><td>1250</td><td>65</td><td>0.65</td></tr> <tr><td>1600</td><td>70</td><td>0.75</td></tr> <tr><td>2000</td><td>74</td><td>0.90</td></tr> <tr><td>2500</td><td>73</td><td>1.34</td></tr> <tr><td>3150</td><td>74</td><td>1.33</td></tr> <tr><td>4000</td><td>77</td><td>1.91</td></tr> <tr><td>5000</td><td>80</td><td>1.97</td></tr> </tbody> </table>	Frequency [Hz]	STL [dB]	ΔSTL	80	34	2.26	100	30	6.04	125	30	1.15	160	38	1.73	200	40	0.98	250	44	1.37	315	46	0.65	400	48	0.47	500	51	1.04	630	54	1.09	800	58	0.70	1000	60	1.34	1250	65	0.65	1600	70	0.75	2000	74	0.90	2500	73	1.34	3150	74	1.33	4000	77	1.91	5000	80	1.97	<div style="text-align: center;"> STL vs. Frequency </div>  <p style="text-align: center;"> — Sound Transmission Loss — STC 54 Reference Contour </p>
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