TEST REPORT

for

International Cellulose Corporation
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Sound Transmission Loss Test

ASTM E 90 – 09 (2016) / E 413 – 16

On

6-1/4 Inch Light Weight Concrete Slab Above
3 Inch 18 gage Galvanized Metal Decking Floor System
With 4 Inches of K-13 sprayed on the bottom of the Decking

Report Number: NGC 5019072

Assignment Number: G-1594

Test Date: 09/17/2019

Report Approval Date: 09/30/2019

Submitted by: _____
Anthony J. Rivers
Test Technician

Reviewed by: _____
Robert J. Menichetti
Director

Revision Summary:

Date	SUMMARY
Approval Date: 09/30/2019	Original issue date. 09/30/2019 Original NGCTS report: NGC 5019072

Report Number: NGC 5019072

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 and Elements – Designation: E 90 – 09 (2016) / E 413 - 16.

Specimen Description 6-1/4 inch overall depth Light weight concrete slab on 3 in. 18 gage Galvanized Metal decking floor-ceiling assem with 4 Inches of K-13 sprayed to the underside of the decking.

The test specimen was a floor-ceiling assembly and was observed to consist of the following: All weights and dimension are averaged:

- 158.8 mm (6-1/4 in.) Light weight concrete slab overall depth, 76.2 mm (3 in.) uninterrupted above deck and 82.6 mm (3-1/4 in.) deep in troughs. Measured weight: 45.70 kg/m^2 (9.36 PSF)
- 76.2 mm (3 in.) 18 gage Galvanized Metal decking deck 1.27 mm (0.05 in.) thick. The deck weight was: 13.38 k
- 101.6 mm (4 in.) K-13 sprayed to the underside of the decking. The K-13 was: 6.88 kg/m^2 (1.41 PSF).

The overall weight of the test assembly is: 65.96 kg/m^2 (13.51 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: Concrete slab cured for a minimum of 28 days
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 5019072 Date: 9/17/2019
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]: 51
Sum of Unfavorable Deviations [dB]: 26
Max. Unfavorable Deviation [dB]: 8 at 250 Hz

Frequency [Hz]	STL [dB]	L1 [dB]	L2 [dB]	d [dB/s]	Corr. [dB]	u.Dev. [dB]	ΔSTL
80	34	102.5	68.8	44.6	0.4		1.78
100	40	104.6	65.0	52.2	0.5		3.46
125	33	103.7	71.2	43.7	0.6	2	2.38
160	33	105.9	75.0	33.6	2.1	5	1.68
200	35	106.7	74.2	33.4	2.5	6	1.72
250	36	103.6	68.1	47.1	0.4	8	1.49
315	43	101.6	58.8	46.8	0.2	4	1.16
400	49	101.3	51.9	58.0	-0.3	1	0.83
500	54	101.9	48.1	56.9	0.2		0.97
630	56	102.3	46.0	59.1	-0.3		0.79
800	59	101.1	42.0	61.5	-0.1		0.36
1000	62	98.8	35.9	61.2	-0.9		0.83
1250	68	97.6	28.7	60.1	-0.9		0.75
1600	71	97.5	25.6	59.9	-0.9		0.63
2000	75	99.7	23.8	61.7	-0.9		0.73
2500	78	101.1	22.9	63.6	-0.2		1.07
3150	78	100.1	20.7	67.9	-1.4		1.26
4000	81	97.9	15.8	72.7	-1.1		1.65
5000	80	90.5	8.7	79.5	-1.8		1.73

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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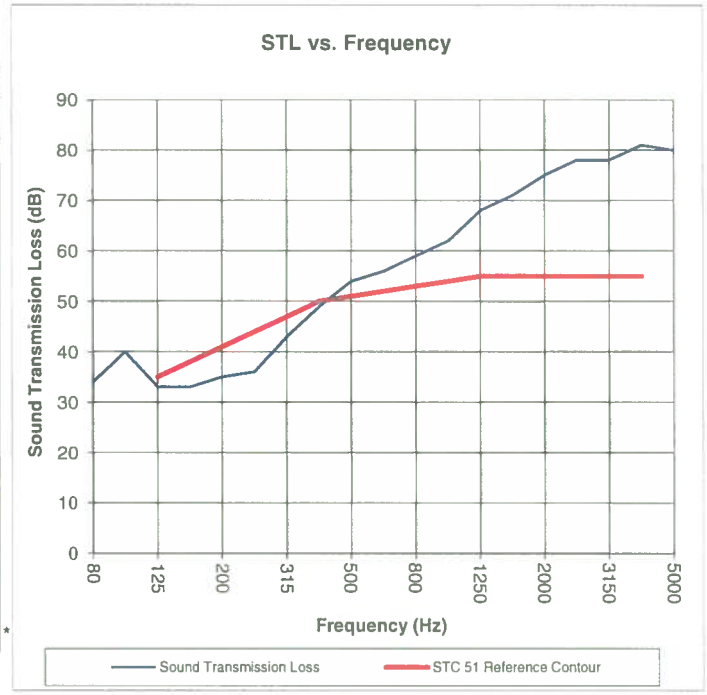
Sound Transmission Loss Test Data

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

Test Report: NGC 5019072
Test Date: 9/17/2019
Specimen Size [m²]: 17.8

Sound Transmission Class STC = 51 dB

Frequency [Hz]	STL [dB]	ΔSTL	
80	34	1.78	
100	40	3.46	
125	33	2.38	
160	33	1.68	
200	35	1.72	
250	36	1.49	
315	43	1.16	
400	49	0.83	
500	54	0.97	
630	56	0.79	
800	59	0.36	
1000	62	0.83	
1250	68	0.75	
1600	71	0.63	
2000	75	0.73	
2500	78	1.07	
3150	78	1.26	
4000	81	1.65	
5000	80	1.73	*



* 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