

TEST REPORT

for

DMX Plastics Limited
165 Orenda Road
Brampton, ON L6W 1W3
Steve Sennik / 905-458-8998

Sound Transmission Loss Test

ASTM E 90 – 09 (2016) / E 413 – 16

On

**6 Inch (152 mm) Concrete Slab Floor- Ceiling Assembly
Overlaid with 8 mm Laminate Flooring and DMX 1-Step 2.0 Underlayment
With a Suspended-Gypsum Board Ceiling
With 3-1/2 Inch Fiberglass Insulation**

Report Number: NGC 5019122

Assignment Number: G-1641

Test Date: 12/20/2019

Report Date: 01/03/2020

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: 01/03/2020	Original issue date: 01/03/2020 Original NGCTS report: NGC 5019122

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

Specimen Description: 6 inch concrete slab floor suspended ceiling assembly overlaid with, according to client, 8mm Laminate Flooring and DMX 1-Step 2.0 Underlayment with 3-1/2 inches of fiberglass 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, according to the client, 8mm Laminate Flooring. The 8mm Laminate Flooring was floating on the DMX 1-Step 2.0 Underlayment. Measured average thickness: 7.62 mm (0.30 in.). Measured average weight: 6.77 kg/m² (1.39 PSF)
- 1 layer of, according to the client, DMX 1-Step 2.0 Underlayment. The underlayment was floating on the concrete slab. Measured average thickness: 4.83 mm (0.19 in.). Measured average weight: 0.68 kg/m² (0.14 PSF)
- 152.4 mm (6 in.) thick reinforced concrete slab, weighing: 366.2 kg/m² (75.00 PSF)
- 1 layer of, 88.9 mm (3-1/2 in.) unfaced fiberglass batt insulation which was laid over the suspended grid system parallel to the main tees. Sample weight: 0.78 kg/m² (0.16 PSF)
- Gypsum wallboard ceiling grid suspension system. System is comprised of main tees and cross tees. The main tees were placed 1219.2 mm (48 in.) o.c. and the cross tees were placed 609.6 mm (24 in.) o.c. 16 gauge galvanized tie wire was used to attach the main tees to concrete anchors, located 1219.2 mm (48 in.) o.c. along the longitudinal axis, suspending the grid 304.8 mm (12 in.) below the concrete slab.
- 1 layer of, 15.9 mm (5/8 in.) Type X gypsum wallboard. The wallboard was attached parallel to the suspended grid suspension system mains, using 28.6 mm (1-1/8 in.) Type S drywall screws spaced 304.8 mm (12 in.) o.c. The wallboard joints were taped. Suspended gypsum wallboard grid ceiling weighed: 11.23 kg/m² (2.30 PSF)

The overall weight of the test assembly is: 385.63 kg/m² (78.99 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.

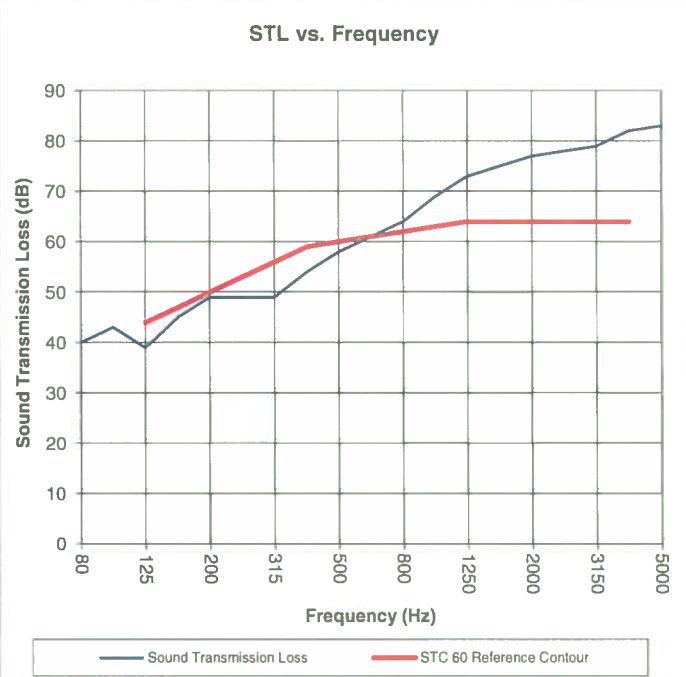
Test Results: The results of the tests are given on pages 4 and 5 of the report.

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Sound Transmission Loss Test Data							
Test: ASTM E 90 - 09 (2016) / ASTM E 413 - 16							
Test Report: NGC 5019122						Date: 12/20/2019	
Specimen Size [m ²]: 17.8						Page 4 of 5	
Source room				Receiving room			
Volume [m ³]: 83.5				Volume [m ³]: 124			
Rm Temp [°C]: 25				Rm Temp [°C]: 23			
Humidity [%]: 50				Humidity [%]: 55			
Sound Transmission Class STC [dB]: 60							
Sum of Unfavorable Deviations [dB]: 26							
Max. Unfavorable Deviation [dB]: 7 at 315 Hz							
Frequency	STL	L1	L2	d	Corr.	u.Dev.	ΔSTL
[Hz]	[dB]	[dB]	[dB]	[dB/s]	[dB]	[dB]	
80	40	101.4	63.7	32.5	2.3		2.19
100	43	102.8	62.9	26.4	3.1		2.78
125	39	103.9	69.6	20.4	4.7	5	1.99
160	45	105.9	66.3	16.9	5.3	2	1.34
200	49	107.2	64.2	15.2	5.9	1	1.29
250	49	103.8	59.9	15.5	5.1	4	1.20
315	49	99.8	55.9	15.0	5.1	7	1.20
400	54	98.5	49.4	16.4	4.8	5	1.68
500	58	100.6	47.1	17.3	4.5	2	1.64
630	61	101.7	45.1	17.8	4.4		1.19
800	64	101.3	41.7	18.5	4.3		1.10
1000	69	99.2	34.8	17.9	4.7		0.69
1250	73	95.9	27.3	18.7	4.4		0.83
1600	75	97.5	26.8	20.6	4.3		0.67
2000	77	98.8	25.9	23.4	4.1		0.92
2500	78	101.0	26.6	25.9	3.6		0.98
3150	79	100.3	24.6	27.4	3.3		1.64
4000	82	97.7	18.2	31.4	2.5		2.43
5000	83	91.4	10.6	35.4	2.2		2.19

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			Page 5 of 5
Test: ASTM E 90 - 09 (2016) / ASTM E 413 - 16			
Test Report: NGC 5019122 Test Date: 12/20/2019 Specimen Size [m ²]: 17.8			
Sound Transmission Class STC = 60 dB			
			
		<p>STL = Sound Transmission Loss, dB Δ STL = Uncertainty for 95% Confidence Level</p>	
		<p>* Due to high insulating value of specimen, background levels limit results at these frequencies.</p>	

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