

REPORT

3933 US ROUTE 11 CORTLAND, NEW YORK 13045

Order No. 105030300

Date: March 23, 2023
Revision Date: April 27, 2023

REPORT NO. 105030300CRT-008lr1

**IMPACT SOUND TRANSMISSION TEST AND CLASSIFICATION OF
TEST NUMBER #295653
ID: DISTRICT: 2MM/6 MIL
OVER A SIX INCH CONCRETE SLAB WITH A DROP CEILING**

RENDERED TO

LIONS FLOOR

INTRODUCTION

This report gives the result of an impact Sound Transmission test on flooring. The sample was selected and supplied by the client and received at the laboratories on March 22, 2023. The material appeared to be in new, unused condition upon arrival.

AUTHORIZATION

Signed Intertek Quotation No. Qu-01328860-4

TEST METHOD

The floor system was tested in general accordance with the American Society for Testing and Materials designation ASTM E492-09 (Reapproved 2016), "Standard Test Method for Laboratory Measurement of Impact Sound Transmission through Floor-Ceiling Assemblies Using the Tapping Machine". It was classified in accordance with ASTM E989-21, entitled "Standard Classification for Determination of Single-Number Metrics for Impact Noise."

GENERAL

The test method is designed to measure the impact sound transmission performance of a floor-ceiling assembly, in a controlled laboratory environment. A standard tapping machine (Bruel & Kjaer Type 3207) was placed at four positions on the test floor that forms the horizontal separation between two rooms, one directly above the other. The data obtained was normalized to a reference room absorption of 10 square meters in accordance with the test method.

The standard also prescribes a single-figure classification rating called "Impact Insulation Class, IIC" which can be used by architects, builders, and code authorities for acoustical design purposes in building construction.

The IIC is obtained by matching a standard reference contour to the plotted normalized one-third octave band sound pressure levels at each test frequency. The greater the IIC rating, the lower the impact sound transmission through the floor-ceiling assembly.

INSTRUMENTATION

Equipment	Calibration Date	Calibration Due	Brand	Model	Asset
Microphone/Pre - DF	May 3, 2022	May 3, 2023	Brüel & Kjaer	4942	E450
Microphone	May 3, 2022	May 3, 2023	Brüel & Kjaer	4231	A227
Pulse Analyzer	May 3, 2022	May 3, 2023	Brüel & Kjaer	3110	E495

DESCRIPTION OF THE TEST SPECIMEN

The test specimen consisted of test number #295653 ID: District: 2mm/6 mil. The plank flooring measured 7-1/4 inches wide by 48 inches long and weighed 0.74 pounds per square foot.

DESCRIPTION OF THE FLOOR/CEILING ASSEMBLY

The floor/ceiling assembly system consisted of a 6 inch thick concrete floor with a drop ceiling below forming the horizontal separation between two rooms, one directly above the other. The drop ceiling consisted of 14 inch deep steel bar joists spaced 38 inches on center. The ceiling construction consisted of 2 x 4 inch wood bolted to the bar joists. The 2 x 4 inch wood was spaced 24 inches on center. Resilient channels (1/2 inch single leaf) were positioned on 16 inch centers between the furring strips and the 1/2 inch gypsum board. Sound attenuation batts (U.S.G. Thermofiber), four (4) inches in thickness were placed between the joists in the formed cavity. The receiving room below measured 1440 cubic feet.

RESULTS OF TEST

The data obtained in the room below the panel normalized to $A_0 = 10$ square meters, is as follows:

1/3 Octave Band Center Frequency <u>Hz</u>	TEST NUMBER #295653 ID: DISTRICT: 2MM/6 MIL 1/3 Octave Band Sound Pressure Level dB (re: 20 μ Pa)
100	51
125	57
160	55
200	55
250	55
315	56
400	58
500	61
630	59
800	60
1000	61
1250	62
1600	62
2000	63
2500	64
3150	60
Impact Insulation Class (IIC)	39

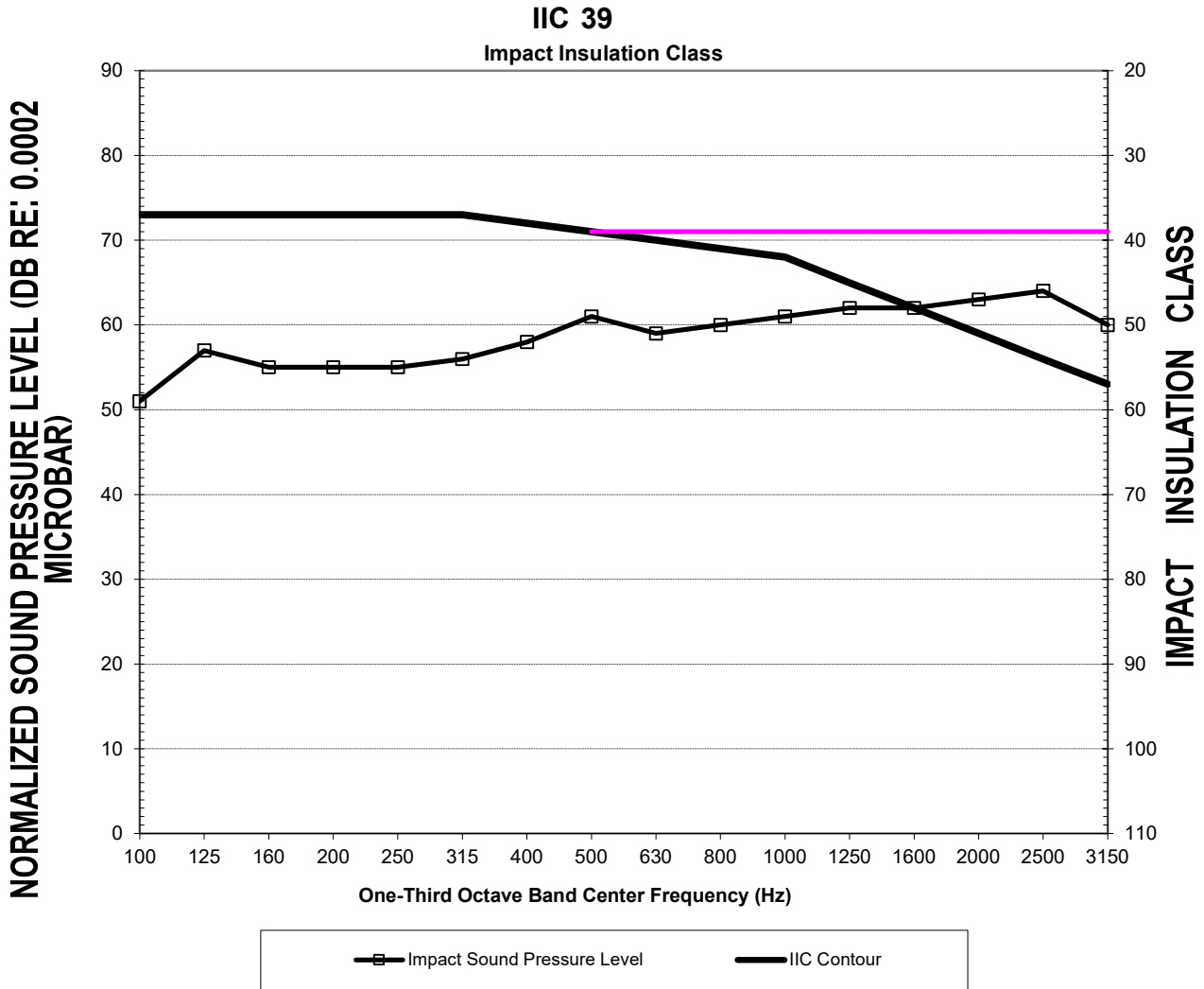
PRECISION

The 95% uncertainty level for each tapping machine location is less than 3 dB for the 1/3 octave bands centered in the range from 100 to 400 Hz and less than 2.5 dB for the bands centered in the range from 500 to 3150 Hz.

For the floor/ceiling construction, the 95% uncertainty limits (ΔL_n) for the normalized sound pressure levels were determined to be less than 2 dB for the 1/3 octave bands centered in the range from 100 to 3150 Hz.

RESULTS OF TEST

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REMARKS

1. Ambient Temperature: 70°F
2. Relative Humidity: 30%

CONCLUSION

The test method employed for this test has no pass/fail criteria; therefore , the evaluation of the test results is left to the discretion of the client.

Date of Test: March 23, 2023



Report Approved by:



Joey Esce
Project Engineer
Acoustical Testing



Brian Cyr
Engineer
Acoustical Testing

Revision #	Approved By	Reviewed By	Comments
1	 Joey Esce Project Engineer	 Brian Cyr Engineer	Fixed room volume error in calculation, updated values for TL and IIC
N/A			
N/A			