



REPORT

3933 US ROUTE 11 CORTLAND, NEW YORK 13045

Order No. 100260833

Date: December 27, 2010

REPORT NO. 100260833CRT-001c

**IMPACT SOUND TRANSMISSION TEST AND
CLASSIFICATION OF ENGINEERED HARDWOOD
OVER GYPSUM CONCRETE OVER A DURA MAT
ON A WOOD JOIST FLOOR/CEILING ASSEMBLY**

INTRODUCTION

This report gives the results of an Impact Sound Transmission Test and Classification on Engineered Hardwood on gypsum concrete over Durason Sound Control Mat on a wood joist floor/ceiling assembly. The sound control mat was selected and supplied by the client and received at the laboratories on November 5, 2010. The sample appeared to be in new, unused condition upon arrival.

AUTHORIZATION

Signed Intertek Quotation No. 500268068.

TEST METHOD

The specimen was tested in accordance with the American Society for Testing and Materials designation ASTM E492-09, "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 E989-06, entitled, "Standard Classification for Determination of Impact Insulation Class (IIC)".

GENERAL

The method is designed to measure the impact sound transmission performance of a floor ceiling assembly, in a controlled laboratory environment. A standard tapping machine (B & K Type 3207) was placed at four positions on a 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

DESCRIPTION OF THE FLOOR/CEILING ASSEMBLY

The test floor is a 100 sq. ft. opening that forms the horizontal separation of the two rooms, one directly above the other. The materials used in the assembly from top to bottom are:

- Nominal 1½ inch thick gypsum concrete
- 3.5 mm thick (0.20 lb. per sq. ft.) Durason Sound Control Underlayment.
- 5/8 inch plywood decking
- 16 inch high open web joists spaced 24 in. o.c.
- 3.5 inch, R-11 batt insulation installed in the cavities
- Dietrich RC Deluxe Resilient Channels spaced 16 inches on center fastened at every intersection
- One layer of 5/8 inch thick Type C gypsum board (taped and finished with compound)

Test #1 – Bare Gypsum – no finished flooring (construction as listed above)

Test #2 – Engineered Hardwood flooring (1/2 inch thick) over 0.08 inch thick foam underlayment

RESULTS OF TESTS

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

1/3 Octave Band Center Frequency Hz	1/3 Octave Band Sound Pressure Level dB re 0.0002 Microbar	
	<u>Test #1 (bare system)</u>	<u>Test #2</u>
100	65	60
125	61	57
160	62	58
200	66	60
250	66	58
315	65	57
400	64	55
500	63	52
630	62	46
800	59	39
1000	53	28
1250	49	21
1600	46	18
2000	48	19
2500	46	18
3150	38	14
Impact Insulation Class (IIC)	50	58

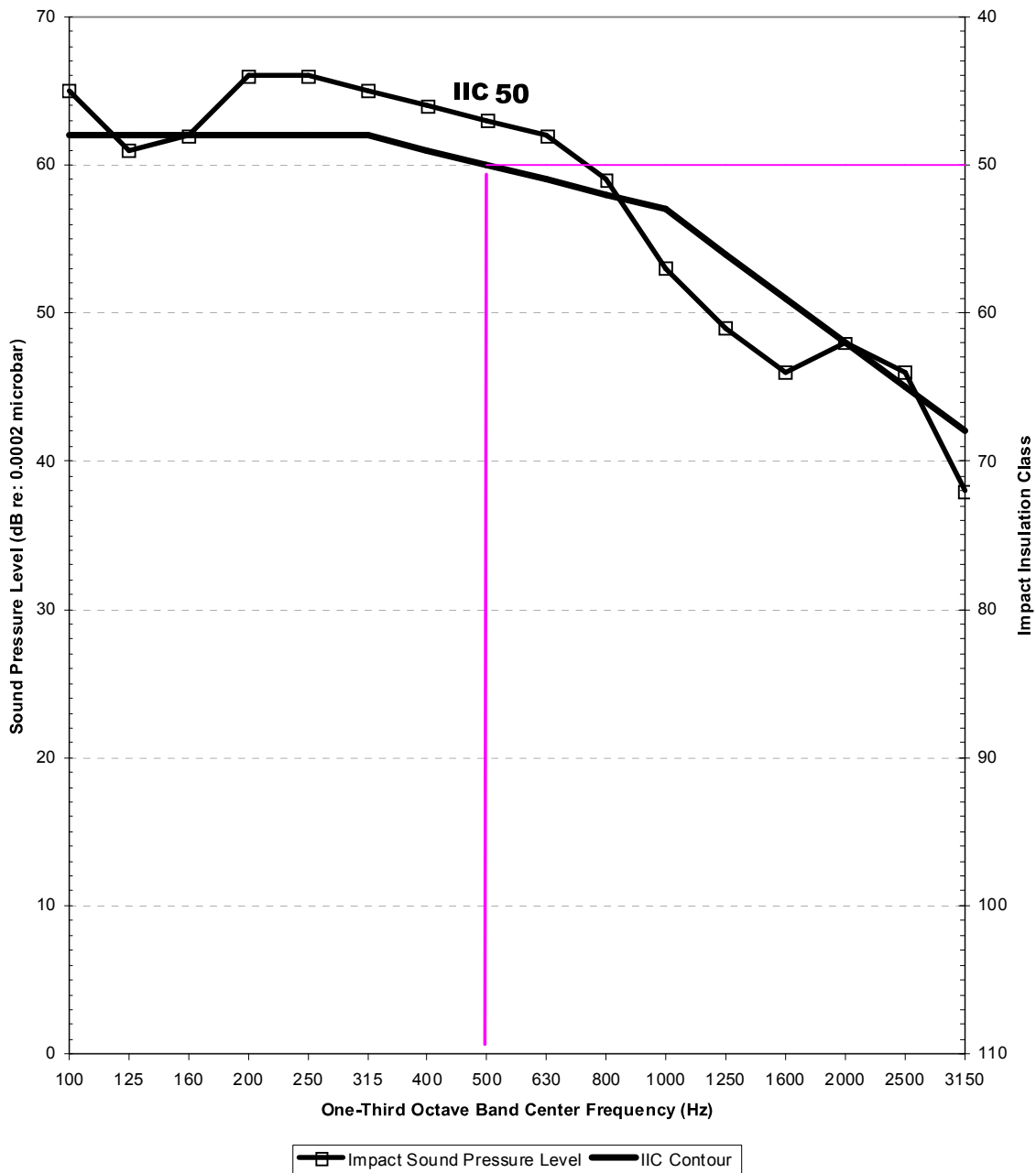
The 95% uncertainty level for each tapping machine location is less than 3 dB for the 1/3 octave bands centered in the range from 100 to 400 Hz and less than 2.5 dB for the bands centered in the range from 500 to 3150 Hz.

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 3500.

RESULTS OF TESTS (cont'd)

TEST #1 (Bare System)

Impact Insulation Class

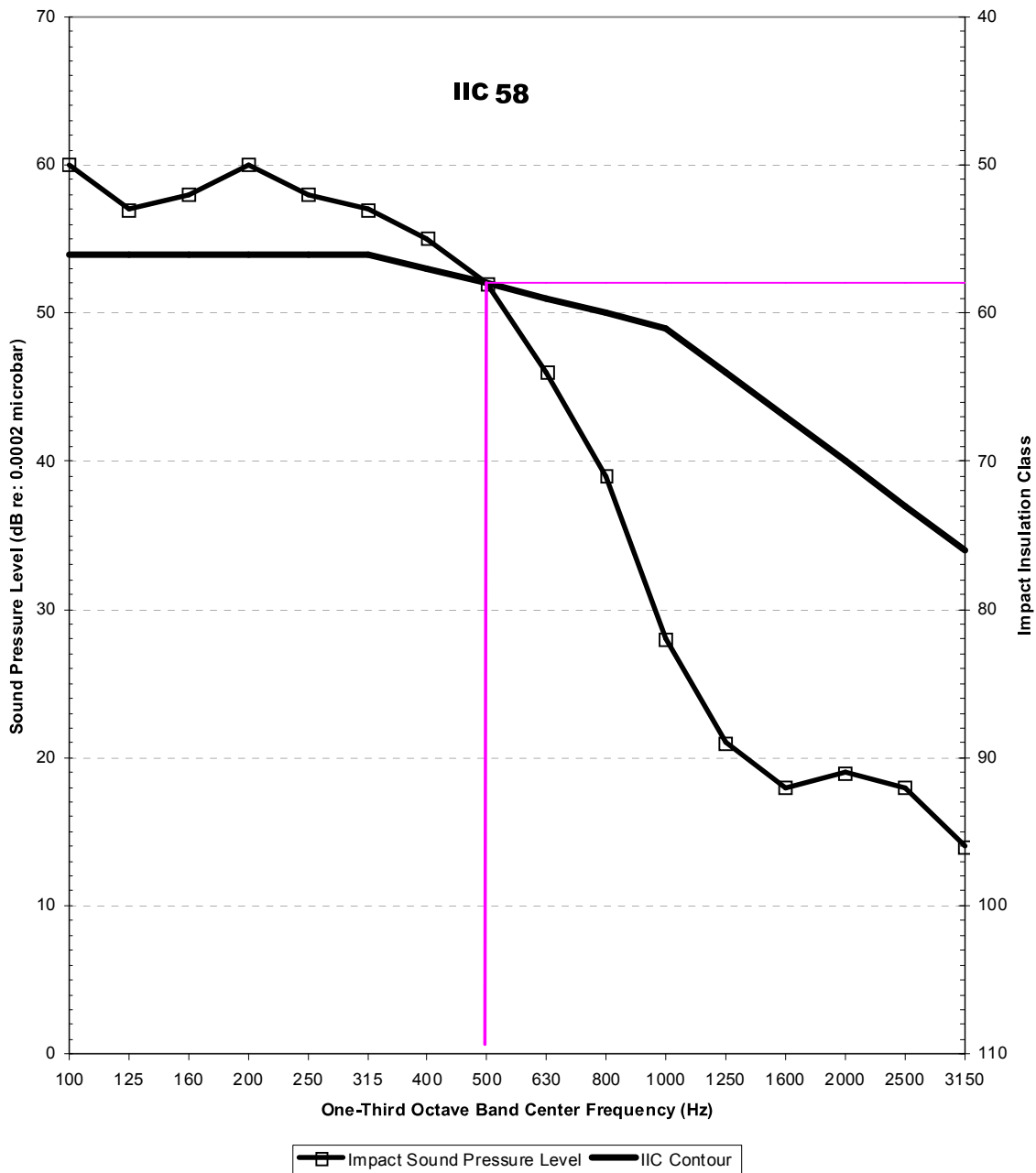


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RESULTS OF TESTS (cont'd)

TEST #2 (Full Installation)

Impact Insulation Class



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FOR THE SCOPE OF
ACCREDITATION UNDER NVLAP
LAB CODE 100402-0.

REMARKS

1. Aging Period: Over 7 Days, Gypsum Concrete.
2. Ambient Temperature: 69°F
3. Relative Humidity: 28%

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.

This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

Date of Tests: December 27, 2010

Report Approved by:

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Acoustical Testing

Report Reviewed By:

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Attachments: None