



REPORT

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

3933 US ROUTE 11 CORTLAND, NEW YORK 13045

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Date: August 2, 2010

REPORT NO. 100163793CRT-001a

**IMPACT SOUND TRANSMISSION TEST AND
CLASSIFICATION OF ENGINEERED HARDWOOD FLOORING
OVER dB-4LOORING PRO UNDERLAYMENT
ON A WOOD JOIST FLOOR/CEILING ASSEMBLY**

RENDERED TO

**UNITED PLASTICS CORPORATION
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INTRODUCTION

This report gives the results of an Impact Sound Transmission Test and Classification on engineered hardwood flooring over dB-4LOORING PRO underlayment over a wood joist floor/ceiling assembly with a 1½ inch gypsum concrete topping. The underlayment was selected and supplied by the client and received at the laboratories on July 8, 2010. The sample appeared to be in new, unused condition upon arrival.

AUTHORIZATION

Signed Intertek Quotation No. 500241082.

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 structural members are open webbed wood floor trusses, 16 inches deep installed 24 inches on center. The sub flooring is 5/8 inch thick plywood. The bridging is a continuous 2 x 4 nailed to the bottom chord and the sides of the diagonals with 2 inch long nails. Single leaf RC-1 resilient channels (2½ inch x ½ inch) were spaced 16 inches on center and attached to the bottom chord by screws. The insulation is 5½ inches of fiberglass. The ceiling is gypsum board, 5/8 inches thick, with the long edges located between the joists perpendicular to the resilient channels. Short edges are staggered by 4 ft. Sheets are fastened to the resilient channels by means of 1½ inch screws located ½ inch away from the edge and 3 inches from the long edges; screws are spaced 6 inches on center. Joints are taped and finished with two layers of compound.

The topping over the plywood sub-floor is 1½ inches of gypsum concrete.

DESCRIPTION OF TEST SPECIMEN

The test specimen consisted of ½ inch thick engineered hardwood flooring over dB-4LOORING PRO underlayment. The underlayment was a composition of EVA and needle fiber (recycled). The ½ inch thick engineered hardwood flooring planks were 4 7/8 inches wide in random lengths. The underlayment was 0.28 inches thick and weighed 1.04 lbs/sq. ft. The underlayment was installed with the rubber side facing down and the flooring installed onto the fiber side.

RESULTS OF TEST

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 <u>Hz</u>	1/3 Octave Band Sound Pressure Level dB re 0.0002 Microbar <u>Level dB re 0.0002 Microbar</u>
100	65
125	61
160	61
200	62
250	63
315	60
400	55
500	52
630	46
800	38
1000	29
1250	22
1600	18
2000	19
2500	18
3150	13
Impact Insulation Class (IIC)	55

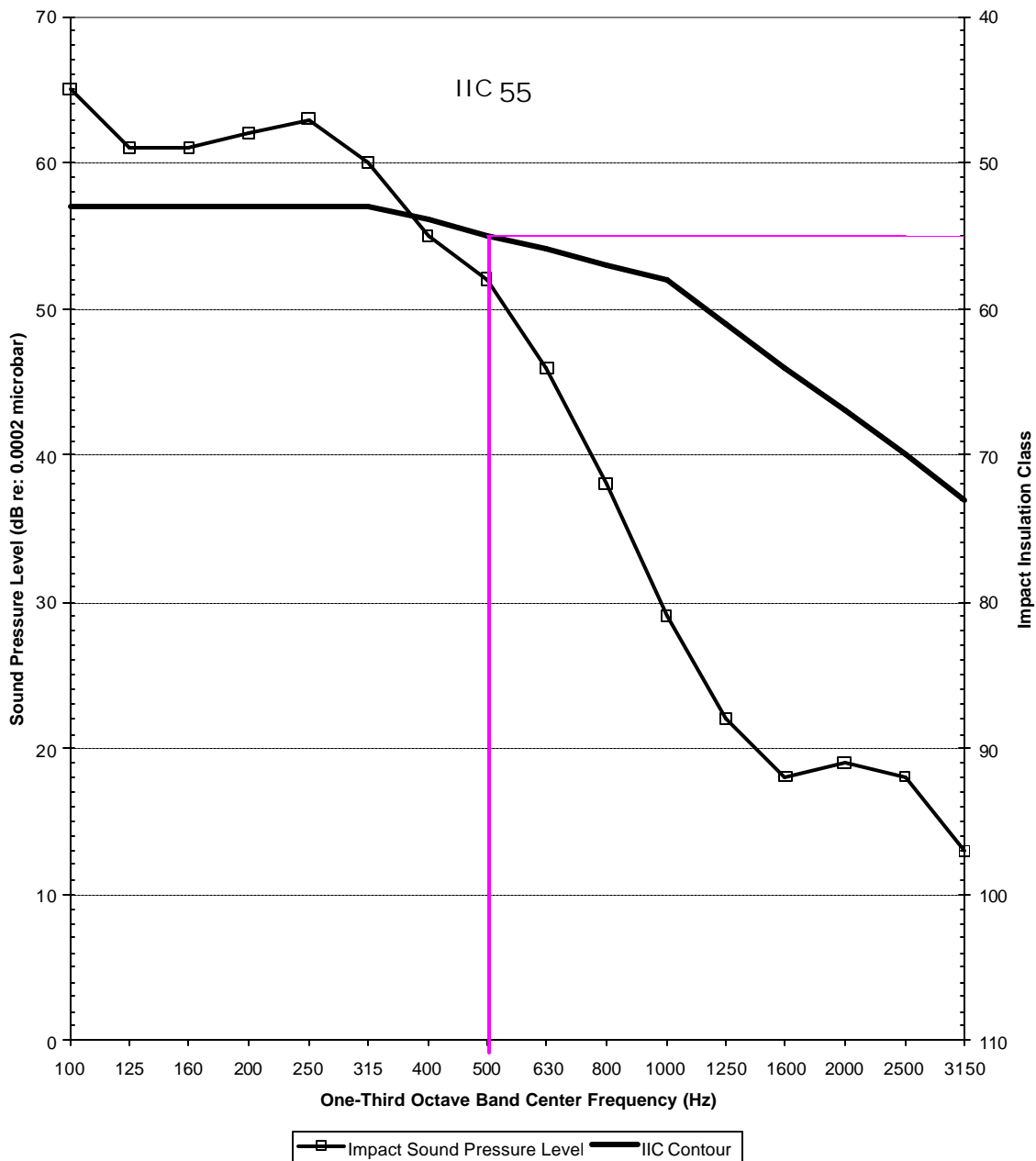
The 95% uncertainty level for each tapping machine location is less than 3 dB for the 1/3 octave bands centered in the range from 100 to 400 Hz and less than 2.5 dB for the bands centered in the range from 500 to 3150 Hz.

For the floor/ceiling construction, the 95% uncertainty limits ($?L_n$) 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 TEST (cont'd)

**ENGINEERED HARDWOOD FLOORING OVER
dB-4 FLOORING PRO UNDERLAYMENT**

Impact Insulation Class



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REMARKS

1. Aging Period: Over 30 Days, Gypsum Concrete.
2. Ambient Temperature: 73°F
3. Relative Humidity: 61%

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 Test: July 20, 2010

Report Approved by:

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Attachments: None