



# REPORT

NVLAP<sup>®</sup>  
FOR THE SCOPE OF  
ACCREDITATION UNDER NVLAP  
LAB CODE 100402-0.

3933 US ROUTE 11 CORTLAND, NEW YORK 13045

Order No. 3151742

Date: May 28, 2008

**REPORT NO. 3151742CRT-001b**

**IMPACT SOUND TRANSMISSION TEST AND  
CLASSIFICATION OF LM FLOORING ½ INCH ENGINEERED HARDWOOD OVER  
CERAZORB GREEN 3MM UNDERLAYMENT  
ON A WOOD JOIST FLOOR/CEILING ASSEMBLY  
WITH A 1 1/2 INCH THICK GYPSUM CONCRETE TOPPING**

**RENDERED TO**

**SOUND SEAL  
50 H. P. ALMGREN DRIVE  
AGAWAM, MA 01001**

## **INTRODUCTION**

This report gives the results of an Impact Sound Transmission Test and Classification of LM Flooring ½ inch Engineered Hardwood over Cerazorb Green Underlayment over a wood joist floor/ceiling assembly with a 1½ inch gypsum concrete topping. The flooring was selected and supplied by the client and received at the laboratories on April 10, 2008. The sample appeared to be in new, unused condition upon arrival.

## **AUTHORIZATION**

Intertek Quote No. 500084548.

## **TEST METHOD**

The specimen was tested in accordance with the American Society for Testing and Materials designation ASTM E492-04, "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 E989-89 (Re-approved 1999), 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 3204) 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 from bottom to top consisted of a layer of Sika T-35 glue, 3MM Cerazorb Green rubber underlayment, another layer of Sika T-35 glue with LM Flooring 1/2 inch thick engineered hardwood (5 inches wide by 48 inches in length).

## 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 Hz	1/3 Octave Band Sound Pressure Level dB re 0.0002 Microbar
100	60
125	57
160	57
200	59
250	61
315	58
400	58
500	56
630	53
800	46
1000	39
1250	34
1600	30
2000	27
2500	26
3150	23
Impact Insulation Class (IIC)	57

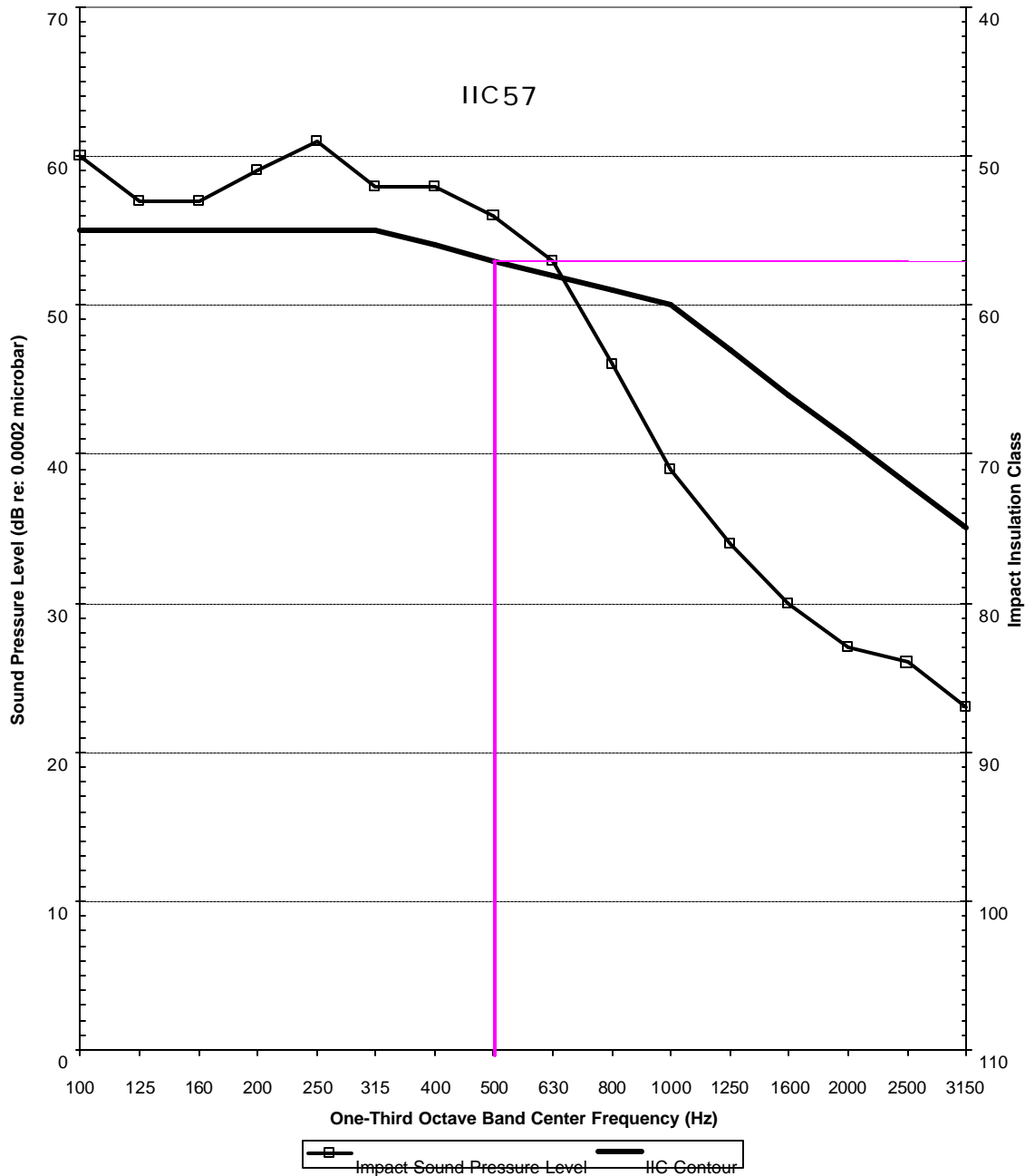
The 95% uncertainty level for each tapping machine location is less than 3 dB for the 1/3 octave bands centered in the range from 100 to 400 Hz and less than 2.5 dB for the bands centered in the range from 500 to 3150 Hz.

For the floor/ceiling construction, the 95% uncertainty limits ( $\Delta L_n$ ) 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 TESTS (cont'd)**

**LM Flooring ½ inch Engineered Hardwood over Cerazorb Green  
3MM underlayment ON A WOOD JOIST FLOOR/CEILING ASSEMBLY**

Impact Insulation Class



**SOUND SEAL**



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## REMARKS

1. Aging Period: 24 hours per glue layer making total aging period 48 hours
2. Ambient Temperature: 73°F
3. Relative Humidity: 33%

## 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: May 13, 2008

Report Approved by:

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Acoustical Testing

Attachments: None