



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

## REPORT

**3933 US ROUTE 11 CORTLAND, NEW YORK 13045**

Order No. 3191934

November 5, 2009

**REPORT NO. 3191934CRT-001g**

**IMPACT SOUND TRANSMISSION TEST  
AND CLASSIFICATION OF  
A WOOD JOIST FLOOR/CEILING ASSEMBLY**

**RENDERED TO**

**PLITEQ, INC.  
1370 DON MILLS ROAD UNIT 300  
TORONTO, ONTARIO M3B 3N7**

### **INTRODUCTION**

This report gives the results of an Impact Sound Transmission Test and Classification of a wood joist floor/ceiling assembly. The floor/ceiling assembly construction and testing were performed by Intertek at the direction of and witnessed by John LoVerde, representing Veneklasen Associates. The sample appeared to be in a new, unused condition.

### **AUTHORIZATION**

Signed Intertek Quotation No. 500182506.

### **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 E989-06, entitled, "Standard Classification for Determination of Impact Insulation Class (IIC)".

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## **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 (Bruel & Kjaer 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 were:

- Armstrong Memories Sheet Vinyl (0.075" Thick) applied using full adhesive in accordance with the manufacturer's instructions – Total Weight 35 Pounds
- ¾" FIRM-FILL (2010) Gypsum Concrete poured October 26, 2009 (Ave. Dry Density 113.6 pcf) – Total Weight 710 pounds
- One layer 19/32" T&G OSB sheathing subfloor fastened with 6d ring shank nails spaced 6" at joints and perimeter and 12" in the field and glued to the joists with OSI PL-400 Construction Adhesive – Total Weight 211 pounds
- Weyerhaeuser Type TJI 230 Series Joists, 12" high, 12' 2" long, spaced 24" on center fastened to bearing plates using bearing clips – Total Weight (bearing plates, clips and joists) 231 pounds
- R-19 batt fiberglass insulation wire hung in the top of the cavities – Total Weight 20 pounds
- Pliteq GenieClips RST attached to the trusses 24" on center using 2 ¼" coarse thread screws - Total Weight 4 pounds
- Hat Channels (7/8") 25 gauge connected to the clips – Total Weight 17 pounds
- Two layers 1/2" thick type "C" Gypsum Board attached to the hat channels using fine thread screws spaced 8 - 16" on center on the first layer and 16" on the second layer (taped & finished) – Total Weight 391 pounds

## RESULTS OF TEST

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

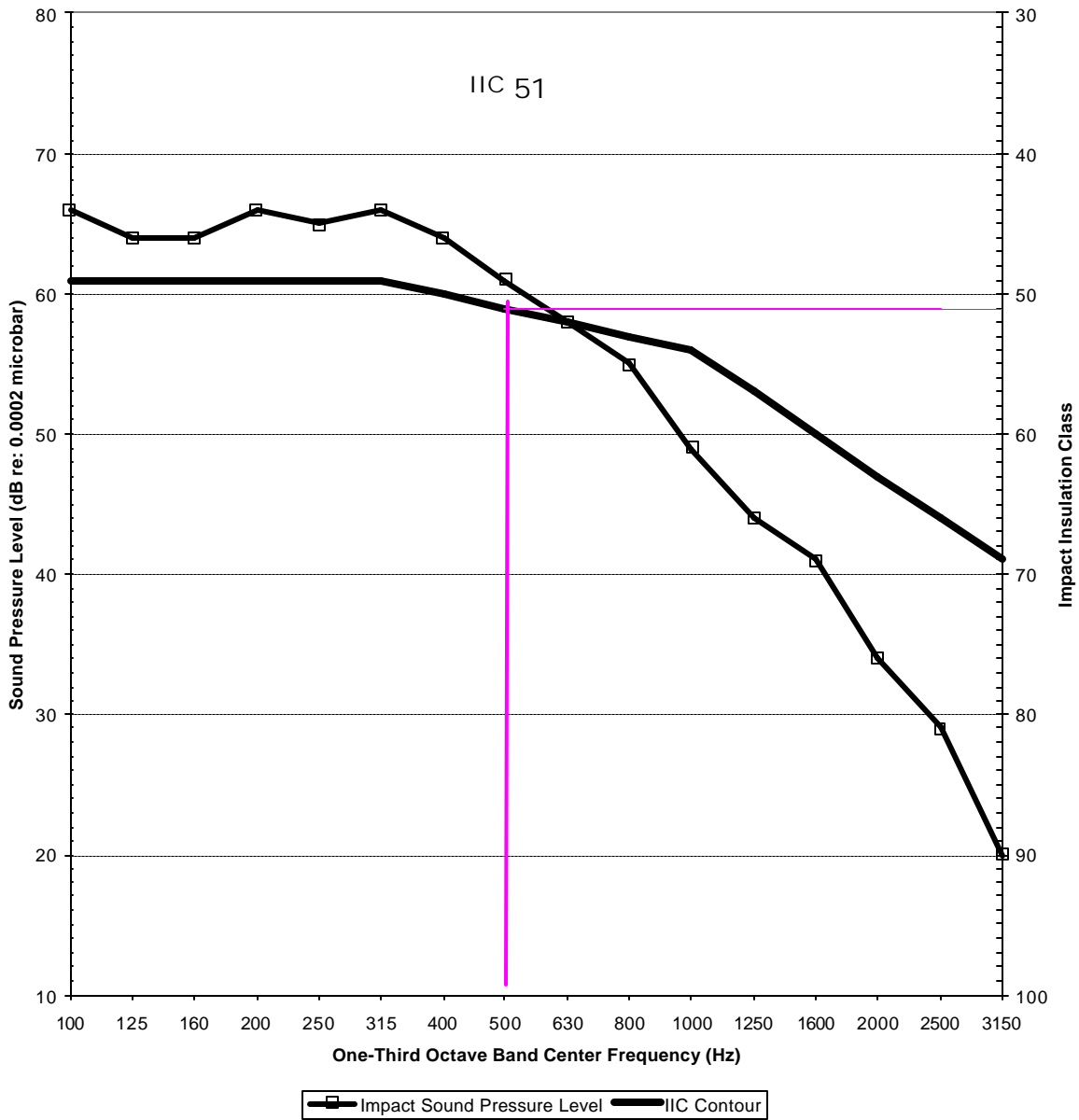
1/3 Octave Band Center Frequency <u>Hz</u>	1/3 Octave Band Sound Pressure Level dB re 0.0002 Microbar
	Armstrong Memories Sheet Vinyl
50	67
63	67
80	64
100	66
125	64
160	64
200	66
250	65
315	66
400	64
500	61
630	58
800	55
1000	49
1250	44
1600	41
2000	34
2500	29
3150	20
Impact Insulation Class (IIC)	51

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.

## ARMSTRONG MEMORIES SHEET VINYL

Impact Insulation Class



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## **REMARKS**

1. Gypsum Concrete: Cure Time 7 Days
2. Ambient Temperature: 69°F
3. Relative Humidity: 37%

## **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: November 2, 2008

Report Approved by:

Brian Cyr  
Engineer  
Acoustical Testing

Report Reviewed By:

James R. Kline  
Engineer/Quality Supervisor  
Acoustical Testing

Attachments: None