

## REPORT

3933 US ROUTE 11 CORTLAND, NEW YORK 13045

Order No. 3175711

Date: April 3, 2009

REPORT NO. 3175711CRT-001c

### IMPACT SOUND TRANSMISSION TEST AND CLASSIFICATION OF CERAMIC TILE OVER FLOOR BLOKKER UNDERLAYMENT ON A SIX INCH CONCRETE SLAB

RENDERED TO

COMMERCIAL ACOUSTICS  
1519 W CYPRESS ST  
TAMPA, FL 33602

#### INTRODUCTION

This report gives the results of an Impact Sound Transmission test and the determination of the Impact Insulation Class of ceramic tile over FLOOR BLOKKER underlayment. The underlayment was selected and supplied by the client and received at the laboratories on March 25, 2009. The sample appeared to be in a new, unused condition.

#### AUTHORIZATION

Signed Intertek Quotation No. 500138564.

#### TEST METHOD

The floor system was tested in general 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)".

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to copy or distribute this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program. Measurement uncertainty budgets have been determined for applicable test methods and are available upon request.



## **TEST METHOD** – Cont'd

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 floor system consisted of a six inch thick concrete slab that forms the horizontal separation between two rooms. The slab is not isolated from the receiving room walls.

## **DESCRIPTION OF TEST SPECIMEN**

The test specimen consisted of ceramic tiles over FLOOR BLOKKER underlayment. The underlayment was a composition of EVA and needle fiber (recycled). The ceramic tiles measured 12 inches square and were 5/16 inches thick. The underlayment was 0.28 inches thick and weighed 0.93 lbs/sq. ft. The underlayment was installed with the rubber side facing down and the tile installed onto the fiber side with tile adhesive applied per the manufacturer's instructions.



## RESULTS OF TEST

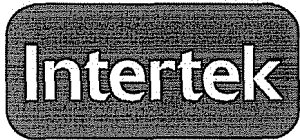
The data obtained in the room below the panel normalized to  $A_0 = 10$  square meters, is as follows:

<u>1/3 Octave Band Center Frequency Hertz</u>	<u>1/3 Octave Band Sound Pressure Level dB re 0.0002 Microbar</u>
100	62
125	67
160	68
200	69
250	67
315	62
400	59
500	57
630	52
800	50
1000	48
1250	49
1600	47
2000	44
2500	43
3150	39
Impact Insulation Class (IIC)	51

### *PRECISION*

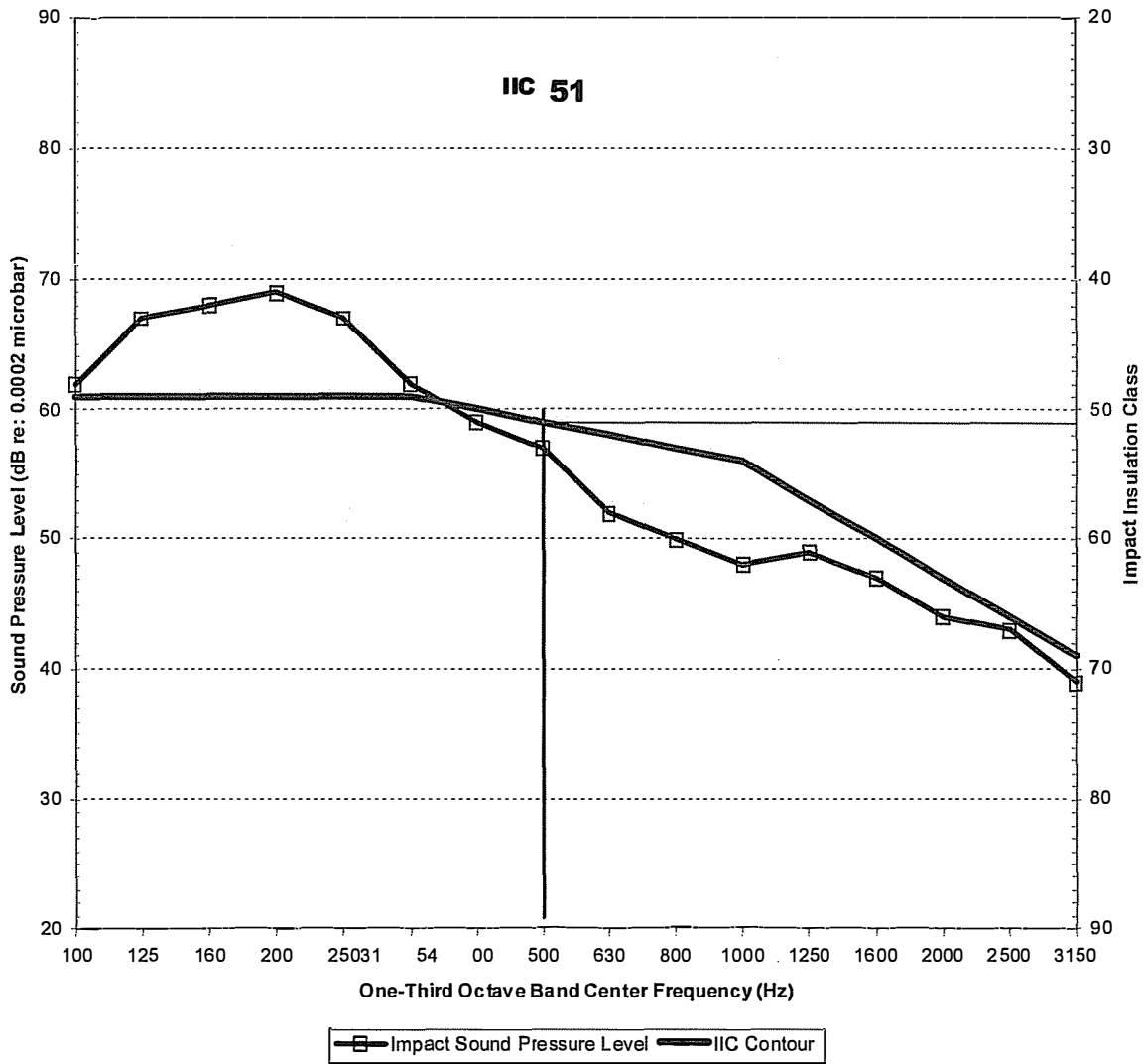
The 95% uncertainty level for each tapping machine location is less than 3 dB for the 1/3 octave bands centered in the range from 100 to 400 Hz and less than 2.5 dB for the bands centered in the range from 500 to 3150 Hz.

For the floor/ceiling construction, the 95% uncertainty limits ( $\Delta L_n$ ) 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 3150 Hz.

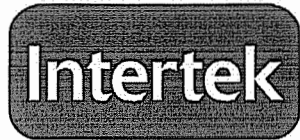


# CERAMIC TILES OVER FLOOR BLOKKE UNDERLAYMENT OVER 6 INCH CONCRETE

Impact Insulation Class



COMMERCIAL ACOUSTICS



**REMARKS**

- 1. Curing Period: None.
- 2. Ambient Temperature: 70°F
- 3. Relative Humidity: 25%

**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 31, 2009

Report Approved by:

Brian Cyr  
Engineer  
Acoustical Testing

Report Reviewed By:

James R. Kline  
Engineer/Quality Supervisor  
Acoustical Testing

Attachments: None