



REPORT

3933 US ROUTE 11 CORTLAND, NEW YORK 13045

Order No. 3178408

Date: May 5, 2009

REPORT NO. 3178408CRT-001

**IMPACT SOUND TRANSMISSION TEST ON
18 INCH AVAIRE SELECT TILES
WITH AVAIRE GROUT
OVER A SIX INCH CONCRETE SLAB WITH A DROP CEILING**

RENDERED TO

**COMC, LLC DBA AVAIRE
13423 F STREET
OMAHA, NE 68137**

INTRODUCTION

This report gives the result of an Impact Sound Transmission test on 18 inch Avaire select tiles with Omega Grout. The flooring materials were selected and supplied by the client and received at the laboratories on April 17, 2009. The sample appeared to be in new, unused condition upon arrival.

AUTHORIZATION

Intertek Quote No. 500147179.

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)".



GENERAL

The test 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 the 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/ceiling assembly system consisted of a 6 inch thick concrete floor with a drop ceiling below forming the horizontal separation between two rooms, one directly above the other. The drop ceiling consisted of 14 inch deep steel bar joists spaced 38 inches on center. The ceiling construction consisted of 2 x 4 inch wood bolted to the bar joists. The 2 x 4 inch wood was spaced 24 inches on center. Resilient channels (1/2 inch single leaf) were positioned on 16 inch centers between the furring strips and the 1/2 inch gypsum board. Sound attenuation batts (U.S.G. Thermofiber), four (4) inches in thickness were placed between the joists in the formed cavity. The receiving room below measured 1440 cubic feet.

DESCRIPTION OF TEST SPECIMEN

The test specimen consisted of Avaire 18 Inch square select tiles with $A_{c,ca}^1$ Grout. The tiles measured 18 inches by 18 inches by a nominal 0.54 inches in thickness including the plastic mounting base and weighed 4.4 lbs per sq ft.



RESULTS OF TEST

The data obtained in the room below the panel normalized to $A_o = 10$ 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	60
125	55
160	56
200	60
250	60
315	62
400	61
500	58
630	56
800	54
1000	53
1250	53
1600	52
2000	50
2500	47
3150	43
Impact Insulation Class (IIC)	53

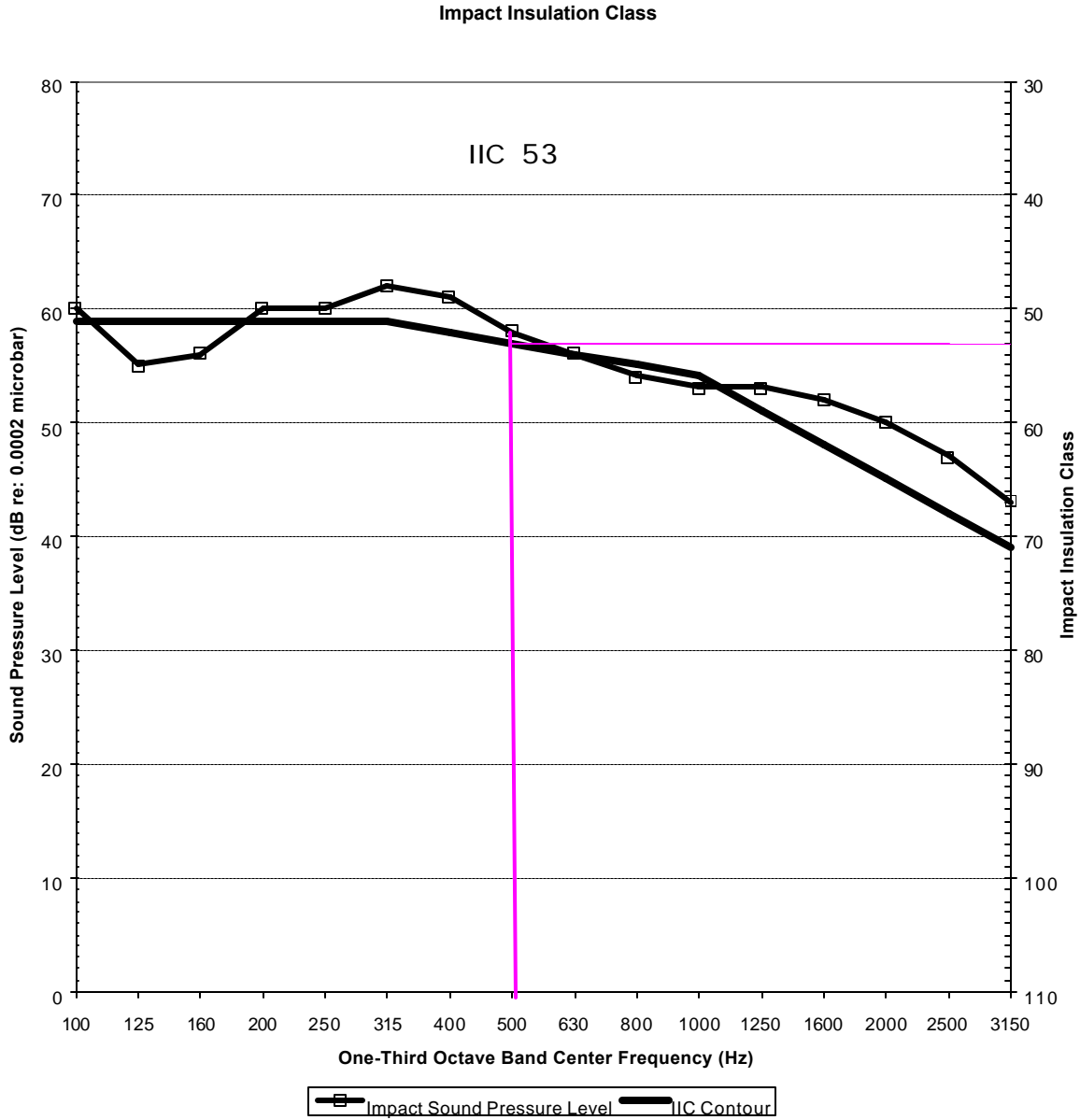
PRECISION

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 ($?L_n$) 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.



18 INCH AVAIRE SELECT TILES WITH AVAIRE FLEXIBLE URETHANE GROUT





REMARKS

1. Ambient Temperature: 70 °F
2. Relative Humidity: 41%

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 5, 2009

Report Approved by:

A handwritten signature in black ink that reads "Brian Cyr".

Brian Cyr
Engineer
Acoustical Testing

Report Reviewed By:

A handwritten signature in black ink that reads "James R. Kline".

James R. Kline
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Attachments: None