



SINCE 1896

REPORT

Intertek ETL SEMKO

3933 US ROUTE 11 CORTLAND, NEW YORK 13045

Order No. 3114204

Date: January 24, 2007

REPORT NO. 3114204CRT-001a

**IMPACT SOUND TRANSMISSION TEST
ON CERAMIC TILES
OVER QQ STEP SOFT 05 035 UNDERLAYMENT ON
A CONCRETE FLOOR WITH A DROP CEILING**

RENDERED TO

**KEENE BUILDING PRODUCTS
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INTRODUCTION

This report gives the result of an Impact Sound Transmission test on Ceramic Tiles over QQ Step Soft 05 035 underlayment. The ceramic tiles and underlayment were selected and supplied by the client and received at the laboratories on December 7, 2006. The samples appeared to be in new, unused condition upon arrival.

AUTHORIZATION

Signed Intertek Quotation No. 500017703.

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 E989-89 (Re-approved 1999), entitled, "Standard Classification for Determination of Impact Insulation Class (IIC)".

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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 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/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 Ceramic Tiles (12 inch square by 5/16 inch thick) installed with Latex Modified Thin Set and grouted (48 hour curing time) over QQ Step Soft 05 035 (nominal 7/32 inch thick reconstituted rubber) which was direct glued to the concrete.

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	59
125	60
160	57
200	58
250	56
315	56
400	51
500	49
630	45
800	44
1000	41
1250	36
1600	33
2000	29
2500	27
3150	23
Impact Insulation Class (IIC)	59

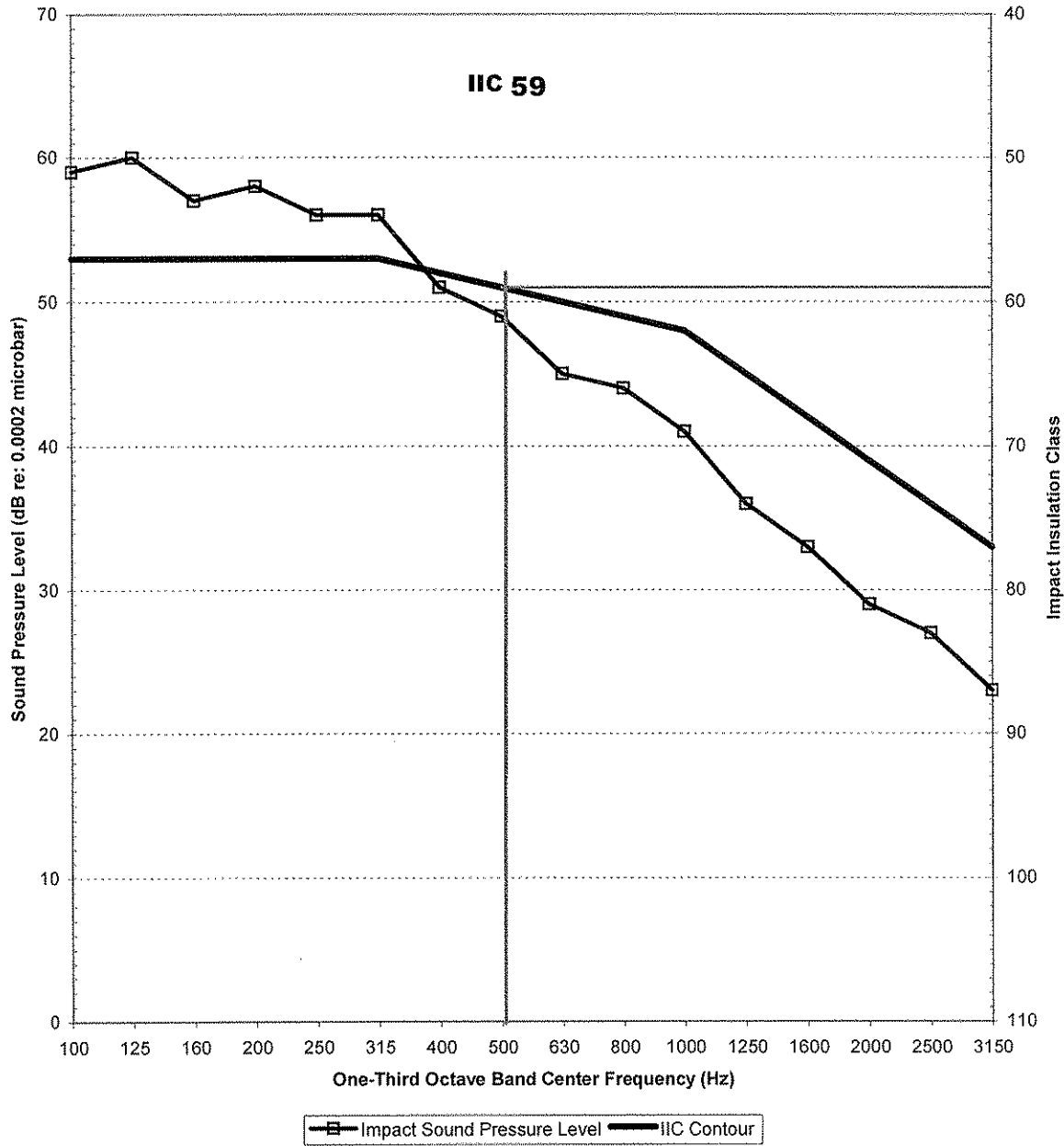
PRECISION

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 (ΔL_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 QQ STEP SOFT 05 035 UNDERLAYMENT

Impact Insulation Class



KEENE BUILDING PRODUCTS

REMARKS

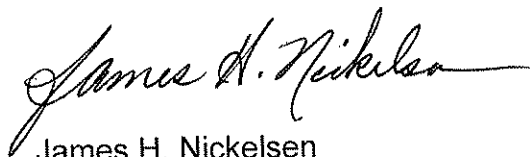
1. Curing Period: Glue / Thin Set / Grout – 72 hours
2. Ambient Temperature: 71 °F
3. Relative Humidity: 44%

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: January 22, 2007

Report Approved by:



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Attachments: None