REPORT

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Order No. 3142157 Date: January 23, 2008

REPORT NO. 31-2157CRT-001

**IMPACT SOUND TRANSMISSION TEST ON
LAMINATE FLOORING OVER 108S RUBBER UNDERLAYMENT
OVER A CONCRETE FLOOR WITH A DROP CEILING**

RENDERED TO

**PROFESSIONAL TESTING
714 GLENWOOD PLACE
DALTON, GA, 30721**

INTRODUCTION

This report gives the result of an Impact Sound Transmission test on Laminate flooring over 108s rubber underlayment. The laminate flooring and underlayment were selected and supplied by DTR Equipment and received at the laboratories on December 27, 2007. The samples appeared to be in new, unused condition upon arrival.

AUTHORIZATION

Intertek Quote No. 500063507.

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)".

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 Laminate flooring over 108s rubber underlayment. The laminate flooring measured 5 inches wide by 12 mm thick by various lengths. The underlayment measured 0.063 inches thick. The flooring weighed 1.77 lbs/sq. ft. and the underlayment weighed 0.395 lbs/sq. ft.

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 Hertz	1/3 Octave Band Sound Pressure Level dB re 0.0002 Microbar
100	58
125	54
160	55
200	55
250	53
315	56
400	57
500	55
630	50
800	45
1000	42
1250	38
1600	34
2000	30
2500	28
3150	25
Impact Insulation Class (IIC)	60

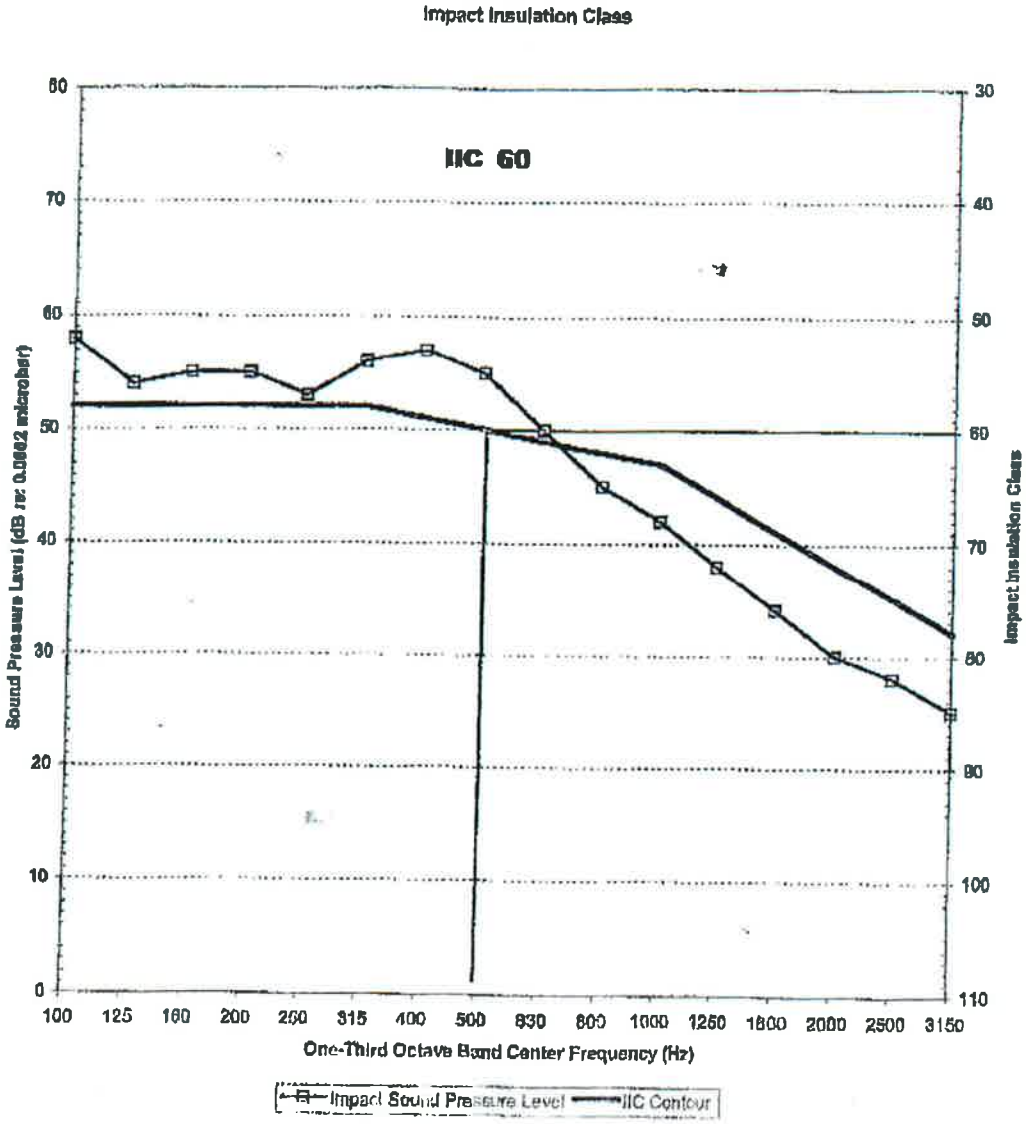
PRECISION

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.

Intertek

LAMINATE FLOORING OVER 108S RUBBER UNDERLAYMENT



PROFESSIONAL TESTING

REMARKS

1. Curing Period: None
2. Ambient Temperature: 68 °F
3. Relative Humidity: 32%

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 23, 2008

Report Approved by:

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Attachments: None