



REPORT

Intertek ETL SEMKO

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**IMPACT SOUND TRANSMISSION TEST AND
CLASSIFICATION OF CERAMIC TILES
OVER QQ STEP SOFT 05 035 UNDERLAYMENT
ON A SIX INCH CONCRETE SLAB**

RENDERED TO

**KEENE BUILDING PRODUCTS
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INTRODUCTION

This report gives the results of an Impact Sound Transmission test and the determination of the Impact Insulation Class of 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 specimen was tested in general accordance with the American Society for Testing and Materials designation ASTM E2179-03, "Standard Test Method for Laboratory Measurement of the Effectiveness of Floor Coverings in Reducing Impact Sound Transmission Through Concrete Floors".

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TEST METHOD – Cont'd

Two vertically adjacent rooms are used: the upper one being designated the source room and the lower one the receiving room (10,000 ft³). A standard concrete floor is installed in an opening between them. The rooms and the floor installation are designed so the only significant sound radiation into the receiving room is from the standard concrete floor.

A standard tapping machine is placed and activated on the standard concrete floor and the impact sound pressure levels are measured in the room below. The floor covering to be evaluated is then placed on the standard concrete floor and the impact sound pressure levels measured again.

The differences in impact sound pressure level are used to calculate two single number ratings. The first is an IIC rating calculated for the covering installed on the reference concrete floor. The second rating, Δ IIC, represents the calculated reduction in IIC when the covering is placed on the reference concrete floor, that is the improvement in IIC due to the covering.

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 (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

Ceramic Tiles over QQ Step Soft 05 035 Underlayment
1/3 Octave Band Sound Pressure
Level dB re 0.0002 Microbar

<u>1/3 Octave Band</u> <u>Center Frequency</u> <u>Hertz</u>	<u>Bare</u> <u>Concrete</u>	<u>Test</u> <u>Specimen</u> <u>on Concrete</u>	<u>Difference</u> <u>In dB</u>	<u>Reference</u> <u>Floor</u>	<u>Calculated</u> <u>Levels</u>
100	61.3	60.0	1.3	67.0	65.7
125	64.2	63.0	1.2	67.5	66.3
160	66.5	65.3	1.2	68.0	66.8
200	68.0	67.2	0.8	68.5	67.7
250	68.5	68.0	0.5	69.0	68.5
315	70.4	68.5	1.9	69.5	67.6
400	71.0	66.8	4.2	70.0	65.8
500	71.6	64.0	7.6	70.5	62.9
630	72.4	61.4	11.0	71.0	60.0
800	73.3	58.3	15.0	71.5	56.5
1000	74.1	53.6	20.5	72.0	51.5
1250	76.2	48.8	27.4	72.0	44.6
1600	77.7	47.3	30.4	72.0	41.6
2000	79.6	46.0	33.6	72.0	38.4
2500	79.2	43.0	36.2	72.0	35.8
3150	78.3	40.0	38.3	72.0	33.7
Impact insulation Class (IIC)*				28	49

Calculated improvement in Impact Insulation Class: IIC 49 – IIC 28 = ΔIIC 21

*Classified in accordance with ASTM E989-89 (Re-approved 1999), entitled, "Standard Classification for Determination of Impact Insulation Class (IIC)".

The uncertainty limit of the impact noise test data 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 on the range from 500 to 3150 Hz.

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