



## FIELD TEST REPORT IMPACT SOUND TRANSMISSION

Report Date: February 23, 2005

|         |                       |              |                |
|---------|-----------------------|--------------|----------------|
| Client: | Sound Seal            | Test Number: | 04-94-1        |
|         | 50 H.P. Almgren Drive | Test Date:   | 12/7/04        |
|         | Agawam, MA 01001      | Tested By:   | Jerry G. Lilly |

Test Specimen: Ceramic Tile over Cera-Zorb on 7.5-inch concrete slab (no ceiling below)

Installation: First & Clay Condominiums, Unit 1107 Master Bedroom  
Seattle, Washington

### Introduction

This report presents the results of a field test of impact sound transmission for the referenced test specimen. The test method generally conforms to the procedure described in ASTM E 1007-97, Standard Test Method for Field Measurement of Tapping Machine Impact Sound Transmission Through Floor-Ceiling Assemblies and Associated Support Structures. The field IIC (FIIC) rating was determined using the procedure described in ASTM E 989-89 (1999).

### Test Configuration and Environment

The test specimen was located near the center of the master bedroom of Unit # 1107 in the First & Clay condominium project (currently under construction) in Seattle, WA. The test specimen consisted of a 3-ft. by 4-ft sample of 3/16-inch thick Cera-Zorb underlayment, to which ¼-inch thick ceramic tiles were installed with thin-set mortar. The test specimen was installed on a sheet of construction paper to facilitate sliding the sample into and out of the test position. The structural floor consisted of a 7.5-inch thick post-tensioned concrete slab, which was poured several months prior to the test. The master bedroom of Unit #1007 served as the receiving room for this test. The two bedrooms stacked vertically in the building, and the volume of each room was 1407 cubic feet. The receiving room was not yet carpeted, and there were no sound absorbing materials in the receiving room. The floor and the ceiling consisted of exposed concrete, and the walls were painted gypsum board. Reverberation measurements in the receiving room were conducted in accordance with ASTM E 2235-04.



### Description of the Test Specimen

The test specimen consisted of ¼-inch thick ceramic tiles secured to the 3/16-inch thick Cera-Zorb underlayment with thin-set mortar. A total of 12 ceramic tiles were used to fabricate the 3-ft. wide by 4-ft. long test specimen. The test sample was installed on construction paper to facilitate moving the sample into and out of its test position. A second sample was also tested, except that the underlayment material for that sample was ½-inch thick cork. Both test specimens were tested with the same tapping machine in the same location. The thin-set mortar was allowed to cure for 36 hours prior to the test, and the grout was allowed to cure for 12 hours prior to the test. Both test samples had the same curing time.

### Test Instrumentation

Tapping Machine: Norsonics Type 211, Serial No. 20487  
Signal Analyzer: Bruel & Kjaer model 2144, Serial No. 1673608  
Calibrator: Bruel & Kjaer model 4230, Serial No. 1025975  
Noise Generator: Bruel & Kjaer model 4224, Serial No. 1042285

### Test Results

The measured test results are presented on pages 3 and 4 in tabular form and on pages 5 and 6 in graphical form. Flanking sound transmission between the source and receive rooms appeared to be insignificant. **The FIIC rating for the Cera-Zorb underlayment is 59. The FIIC rating for the ½-inch cork underlayment is 60.**

### Certification

I hereby certify that the test results presented in this report were obtained in conformance with ASTM E 1007-97 (except for the limited physical size of the test specimen and the volume of the receive room), and they accurately reflect the acoustical performance of the specimen that was tested. No other modifications were made to the test specimen or setup to reduce flanking.

Respectfully submitted,

A handwritten signature in black ink that reads "Jerry G. Lilly".

Jerry G. Lilly, P.E.  
President





| Ceramic Tile on 1/2" Cork<br>MBR 1007 |        |        |        |        | Ceramic Tile over 1/2-inch Cork<br>7.5-inch Concrete Slab, No Ceiling |          |                    |                     |                    | Sample Size: 12.0 sq.ft. |               | Test Date: 12/7/04 |  |
|---------------------------------------|--------|--------|--------|--------|---|----------|--------------------|---------------------|--------------------|--------------------------|---------------|--------------------|--|
|                                       |        |        |        |        | Ambient Corrected Energy Avg. SPL                                     |          | Reverb. Time (sec) | Absorption (sabins) | Normal. ISPL* (dB) | 60 IIC Contour           | Total Def. 29 | Max. Def. 6        |  |
| Frequency (Hz)                        | Pos. 1 | Pos. 2 | Pos. 3 | Pos. 4 | Ambient   | Avg. SPL | Time (sec)         | (sabins)            | ISPL* (dB)         | IIC                      | Def.          | Def.               |  |
| 20                                    | 52.5   | 51.2   | 51.3   | 49.8   | 45.0  | 50.1     |                    |                     | 50.1               |                          |               |                    |  |
| 25                                    | 43.9   | 43.3   | 42.1   | 42.6   | 40.7  | 41.0     |                    |                     | 41.0               |                          |               |                    |  |
| 31                                    | 48.2   | 46.9   | 46.4   | 46.9   | 42.1  | 45.5     |                    |                     | 45.5               |                          |               |                    |  |
| 40                                    | 48.9   | 50.7   | 51.0   | 49.8   | 44.5  | 48.8     |                    |                     | 48.8               |                          |               |                    |  |
| 50                                    | 44.9   | 44.2   | 46.0   | 47.0   | 37.1  | 45.0     |                    |                     | 45.0               |                          |               |                    |  |
| 63                                    | 50.1   | 49.6   | 48.9   | 48.8   | 38.0  | 49.0     |                    |                     | 49.0               |                          |               |                    |  |
| 80                                    | 47.2   | 48.2   | 49.3   | 46.6   | 39.4  | 47.3     |                    |                     | 47.3               |                          |               |                    |  |
| 100                                   | 49.0   | 49.5   | 47.8   | 47.8   | 39.4  | 48.0     | 0.57               | 122                 | 48.6               | 52                       | 0             | *                  |  |
| 125                                   | 55.1   | 56.9   | 56.6   | 56.7   | 39.2  | 56.3     | 0.66               | 106                 | 56.2               | 52                       | 4             |                    |  |
| 160                                   | 56.7   | 55.9   | 55.5   | 57.1   | 36.7  | 56.3     | 0.77               | 91                  | 55.5               | 52                       | 4             |                    |  |
| 200                                   | 56.4   | 56.9   | 55.6   | 56.9   | 39.6  | 56.4     | 0.79               | 88                  | 55.5               | 52                       | 4             |                    |  |
| 250                                   | 56.9   | 57.5   | 57.0   | 56.7   | 38.9  | 57.0     | 0.60               | 116                 | 57.3               | 52                       | 5             |                    |  |
| 315                                   | 56.6   | 58.0   | 55.7   | 55.8   | 30.1  | 56.6     | 0.50               | 139                 | 57.7               | 52                       | 6             | #                  |  |
| 400                                   | 55.2   | 54.5   | 51.3   | 52.5   | 25.4  | 53.6     | 0.48               | 145                 | 54.9               | 51                       | 4             | #                  |  |
| 500                                   | 52.9   | 50.9   | 48.8   | 49.7   | 24.9  | 50.8     | 0.52               | 134                 | 51.8               | 50                       | 2             | #                  |  |
| 630                                   | 49.5   | 48.2   | 45.8   | 47.9   | 25.1  | 48.0     | 0.63               | 111                 | 48.1               | 49                       | 0             |                    |  |
| 800                                   | 48.4   | 47.2   | 44.1   | 44.8   | 26.8  | 46.4     | 0.62               | 112                 | 46.6               | 48                       | 0             |                    |  |
| 1000                                  | 45.7   | 44.1   | 40.9   | 42.9   | 27.2  | 43.6     | 0.71               | 98                  | 43.2               | 47                       | 0             |                    |  |
| 1250                                  | 41.2   | 40.2   | 38.3   | 38.3   | 23.2  | 39.6     | 0.79               | 88                  | 38.7               | 44                       | 0             |                    |  |
| 1600                                  | 40.1   | 33.2   | 37.4   | 34.2   | 20.5  | 37.0     | 0.75               | 93                  | 36.3               | 41                       | 0             |                    |  |
| 2000                                  | 36.1   | 31.0   | 34.5   | 32.2   | 18.7  | 33.7     | 0.70               | 100                 | 33.4               | 38                       | 0             |                    |  |
| 2500                                  | 30.5   | 30.3   | 29.3   | 29.0   | 18.1  | 29.5     | 0.67               | 104                 | 29.4               | 35                       | 0             |                    |  |
| 3150                                  | 24.7   | 26.4   | 23.1   | 23.6   | 17.2  | 23.8     | 0.68               | 103                 | 23.5               | 32                       | 0             |                    |  |
| 4000                                  | 21.9   | 18.7   | 19.3   | 19.6   | 15.2  | 18.0     | 0.67               | 104                 | 17.9               |                          |               |                    |  |
| 5000                                  | 17.5   | 16.5   | 16.9   | 17.7   | 13.7  | 15.2     | 0.67               | 104                 | 15.0               |                          |               |                    |  |
| dBL                                   | 73.3   | 74.5   | 75.5   | 76.9   | 75.3  | 73.2     |                    |                     |                    |                          |               |                    |  |
| dBA                                   | 57.9   | 57.6   | 55.7   | 56.3   | 36.8  | 56.9     |                    |                     |                    |                          |               |                    |  |

I certify that this test was conducted in accordance with ASTM E 1007-97

**The FIC rating for this assembly is: 60**

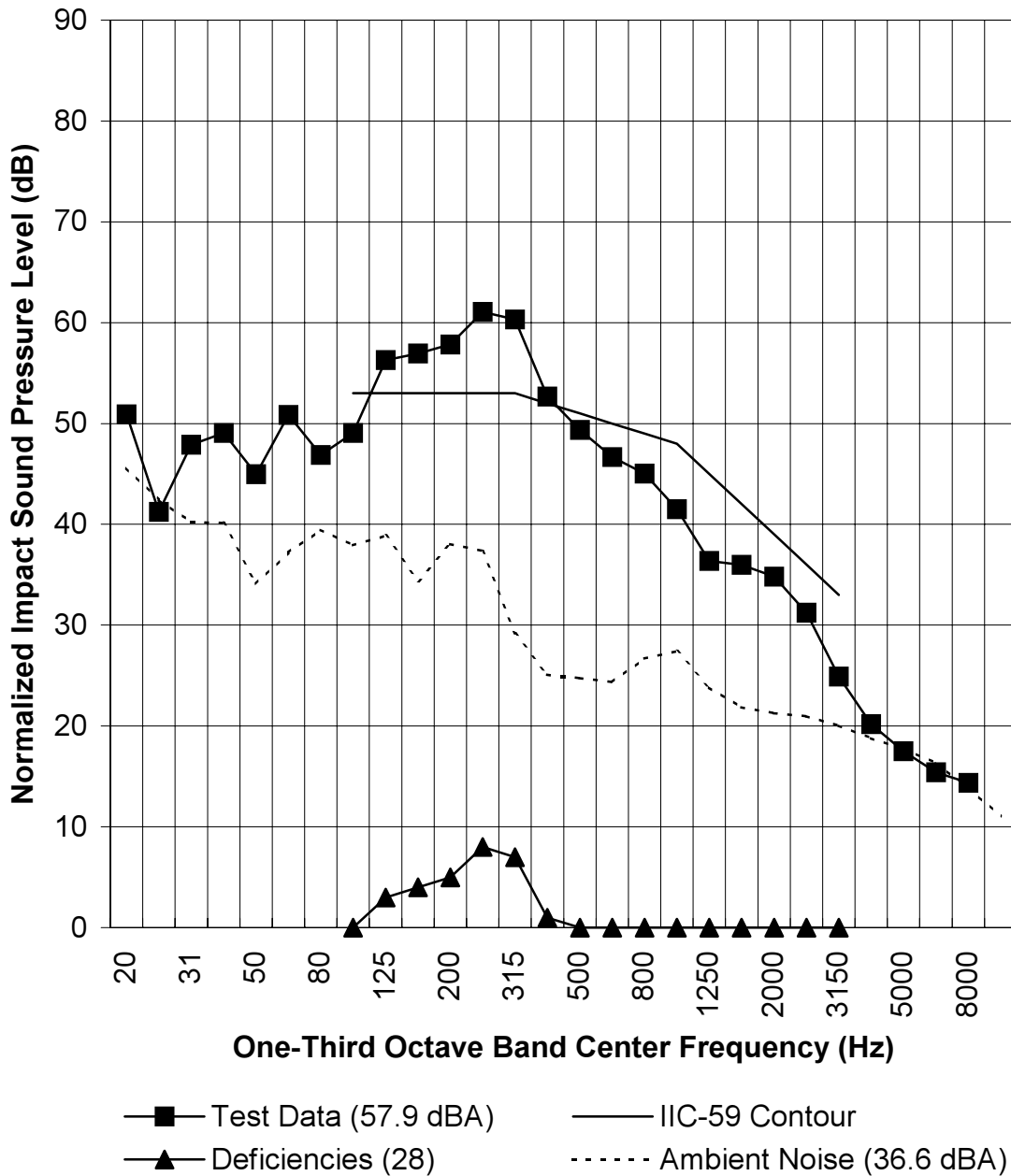
\_\_\_\_\_  
 Jerry G. Lilly, P.E.  
 President

\_\_\_\_\_  
 Date

\* Room volume is too small for accurate data in these bands  
 # Room absorption exceeds value recommended by ASTM E 1007-97



### Ceramic Tile on Cera-Zorb Impact Noise in MBR 1007 (Field IIC-59\*)





**Ceramic Tile on 1/2" Cork  
 Impact Noise in MBR 1007  
 (Field IIC-60\*)**

