



# WESTERN ELECTRO - ACOUSTIC LABORATORY

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25132 Rye Canyon Loop Santa Clarita, California 91355 Tel: (661) 775-3741 Fax: (661) 775-3742 www.weal.com

## SOUND ABSORPTION TEST REPORT NO. AB06-153

CLIENT: **Metal Dek Group, a unit of CSI**  
650 Rosewood Drive  
Columbia, SC 29202

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31 August 2006

TEST DATE: 30 August 2006  
TEST SPECIMEN: Perforated Metal Decking

### INTRODUCTION

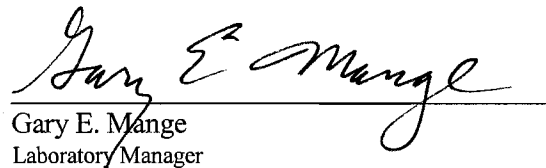
The methods and procedures used for this test conform to the provisions and requirements of ASTM Procedure C 423-02a, *Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method*. Copies of the test standard are available at [www.astm.org](http://www.astm.org). The test chamber volume is 275 cubic meters. Western Electro-Acoustic Laboratory is accredited by the United States Department of Commerce, National Institute of Standards and Technology under the National Voluntary Accreditation Program (NVLAP) Lab Code 100256-0 for this test procedure. This test report relates only to the item(s) tested. Any advertising that utilizes this test report or test data must not imply product certification or endorsement by WEAL, NVLAP, NIST or the U.S. Government.

### DESCRIPTION OF TEST SPECIMEN

The test specimen consisted of Metal Dek Group Versa-Dek 3.5 LSA perforated metal decking on 2 inch (50.8 mm) thick polyisocyanurate rigid insulation board. The test specimen consisted of four panels, each of which was nominally 9 feet (2.74 m) by 2 feet (610 mm) by 3-1/2 inches (88.9 mm) thick. The panels had a dove tail shape profile with an 8 inch (203 mm) pitch. The perforated portion of each pitch was 7-1/4 inches (184 mm). The perforations were .156 inch (3.96 mm) diameter holes on .324 inch (8.23 mm) staggered centers. Behind the perforated sections were plastic lath and shaped pieces of 2 inch (50.8 mm) 3 lb./ft.<sup>3</sup> (48 kg/m<sup>3</sup>) density fiberglass. During the test, the lath and fiberglass were held up against the perforated metal to simulate the installed configuration. The four panels were placed side by side on the test chamber floor to form a nominal 9 foot (2.74 m) by 8 foot (2.44 m) sample. The edges were covered with wood around the entire perimeter of the test specimen and duct taped together at the corners. The overall dimensions of the specimen were 108 inches (2.74 m) by 94-3/4 inches (2.41 m) by 5-1/2 inches (140 mm) thick. The overall weight of the specimen was 272 lbs. (123 kg).

Test results are presented on the following page.

Respectfully submitted,  
Western Electro-Acoustic Laboratory

  
Gary E. Mange  
Laboratory Manager

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TEST DATE: 30 August 2006

Mounting per ASTM E 795-00: Type A

Area tested: 71.06 ft<sup>2</sup> (6.60 m<sup>2</sup>)

Temperature: 75.6° F

Humidity: 43%

## TEST RESULTS

### 1/3 Octave Band Absorption Data

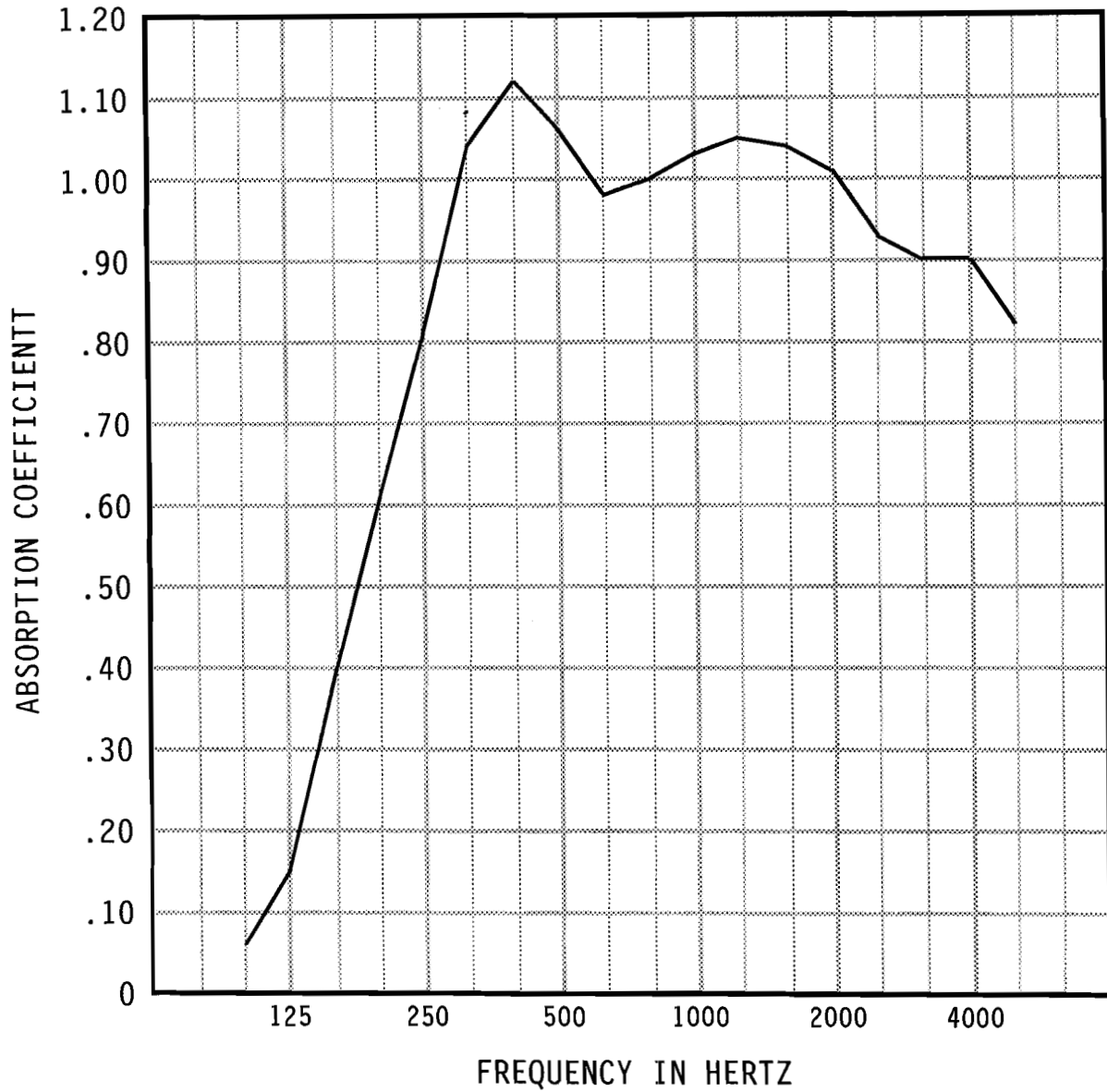
Frequency in Hz	Absorption in Sabins	Absorption Coefficients
100	4.0	0.06
125	10.9	0.15
160	28.5	0.40
200	43.3	0.61
250	57.6	0.81
315	74.2	1.04
400	79.6	1.12
500	75.5	1.06
630	69.8	0.98
800	71.3	1.00
1000	72.9	1.03
1250	74.5	1.05
1600	73.6	1.04
2000	71.6	1.01
2500	65.8	0.93
3150	64.0	0.90
4000	63.9	0.90
5000	58.2	0.82

**NRC 1.00**  
**SAA 0.97**

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Specimen Area: 71.06 sq.ft.  
Temperature: 75.6 deg. F  
Relative Humidity: 43 %

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