

## Test Report

FOR: **GIK Acoustics**  
Atlanta, GA

**Sound Absorption**  
**RAL-A16-290**

CONDUCTED: 2016-10-12

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ON: D-GIK Panels

### TEST METHOD

Riverbank Acoustical Laboratories™ is accredited by the U.S. Department of Commerce, National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP) as an ISO 17025:2005 Laboratory (NVLAP Lab Code: 100227-0) and for this test procedure. The test reported in this document conformed explicitly with ASTM C423-09a: "Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method." The specimen mounting was performed according to ASTM E795-05(2012): "Standard Practices for Mounting Test Specimens During Sound Absorption Tests." A description of the measuring procedure and room qualifications is available upon request.

### DESCRIPTION OF THE SPECIMEN

The test specimen was designated by the manufacturer as D-GIK Panels. A full internal inspection performed on the test specimen by Riverbank personnel verified the manufacturer's description.

#### Specimen

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Overall Dimensions: 8 @ 1219.2 mm (48 in.) x 603.25 mm (23.75 in.)  
Overall Thickness: 109.73 mm (4.32 in.)  
Weight: 67.02 kg (147.75 lbs.)  
Face Material: Wood  
Face Thickness: 5.66 mm (0.223 in.)  
Backing: Fiberglass  
Backing Thickness: 102.5 mm (4.035 in.)  
Face Perforations:  
Diameter: 9 @ 74.68 mm (2.94 in.), 8 @ 125.48 mm (4.94 in.)  
4 @ 176.28 mm (6.94 in.), 8 @ 49.28 mm (1.94 in.)  
Open Area: 0.25 m<sup>2</sup> (2.70 ft<sup>2</sup>)

#### Physical Measures

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Overall Dimensions: 2.41 m (95.00 in.) wide by 2.44 m (96.00 in.) long  
Overall Thickness: 111.13 mm (4.38 in.)  
Overall Weight: 67.02 kg (147.75 lbs.)  
Area: 5.88 m<sup>2</sup> (63.30 ft<sup>2</sup>)  
Mass per Unit Area: 11.38 kg/m<sup>2</sup> (2.33 lbs./ft<sup>2</sup>)

#### Test Environment

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Volume: 292.0 m<sup>3</sup> (10,311.0 ft<sup>3</sup>)  
Temperature: 21.7±0.0°C (71.0±0.0°F)  
Humidity: 62.0±0.0%  
Barometric Pressure: 98.5 kPa.



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Figure 1 - Specimen mounted in the test chamber.



Figure 2 - Detail of the test specimen.



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### MOUNTING METHOD

Type D-100 Mounting: The test specimen was mounted on 100 mm (3.937 in.) thick wood furring strips spaced 300 mm (12 in.) on centers and laid directly against the test surface. The furring strips produced a 100 mm (3.937 in.) thick air space behind the test specimen. The perimeter was sealed with wood and metal framing.

### TEST RESULTS

| 1/3 Octave Center<br>Frequency<br>(Hz) | Total Absorption (SI)<br>(m <sup>2</sup> ) | Total Absorption (IP)<br>(Sabins) | Absorption<br>Coefficient<br>(Sabins / ft <sup>2</sup> ) |
|--|--|-----------------------------------|--|
| 100                                    | 7.87                                       | 84.77                             | 1.34   |
| ** 125                                 | 7.34                                       | 78.97                             | 1.25   |
| 160                                    | 6.94                                       | 74.70                             | 1.18   |
| 200                                    | 6.92                                       | 74.48                             | 1.18   |
| ** 250                                 | 6.36                                       | 68.45                             | 1.08   |
| 315                                    | 5.72                                       | 61.59                             | 0.97   |
| 400                                    | 5.84                                       | 62.91                             | 0.99   |
| ** 500                                 | 5.74                                       | 61.79                             | 0.98   |
| 630                                    | 5.35                                       | 57.62                             | 0.91   |
| 800                                    | 5.13                                       | 55.19                             | 0.87   |
| ** 1000                                | 4.85                                       | 52.25                             | 0.83   |
| 1250                                   | 4.56                                       | 49.13                             | 0.78   |
| 1600                                   | 4.11                                       | 44.24                             | 0.70   |
| ** 2000                                | 3.84                                       | 41.31                             | 0.65   |
| 2500                                   | 3.40                                       | 36.62                             | 0.58   |
| 3150                                   | 3.27                                       | 35.23                             | 0.56   |
| ** 4000                                | 3.07                                       | 33.07                             | 0.52   |
| 5000                                   | 3.11                                       | 33.44                             | 0.53   |

**SAA = 0.88**  
**NRC = 0.90**



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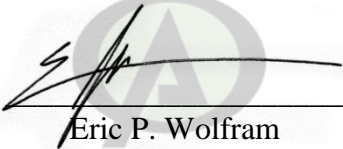
TEST RESULTS (Continued)

The sound absorption average (SAA) is defined as a single number rating, the average, rounded to the nearest 0.01, of the sound absorption coefficient of a material for the twelve one-third octave bands from 200 through 2500 Hz, inclusive.

The noise reduction coefficient (NRC) is defined from previous versions of this same test method as the average of the coefficients at 250, 500, 1000, and 2000 Hz, expressed to the nearest integral multiple of 0.05.

Tested by   
Dean Victor  
Senior Experimentalist

Report by   
Miles Possing  
Acoustician

Approved by   
Eric P. Wolfram  
Laboratory Manager



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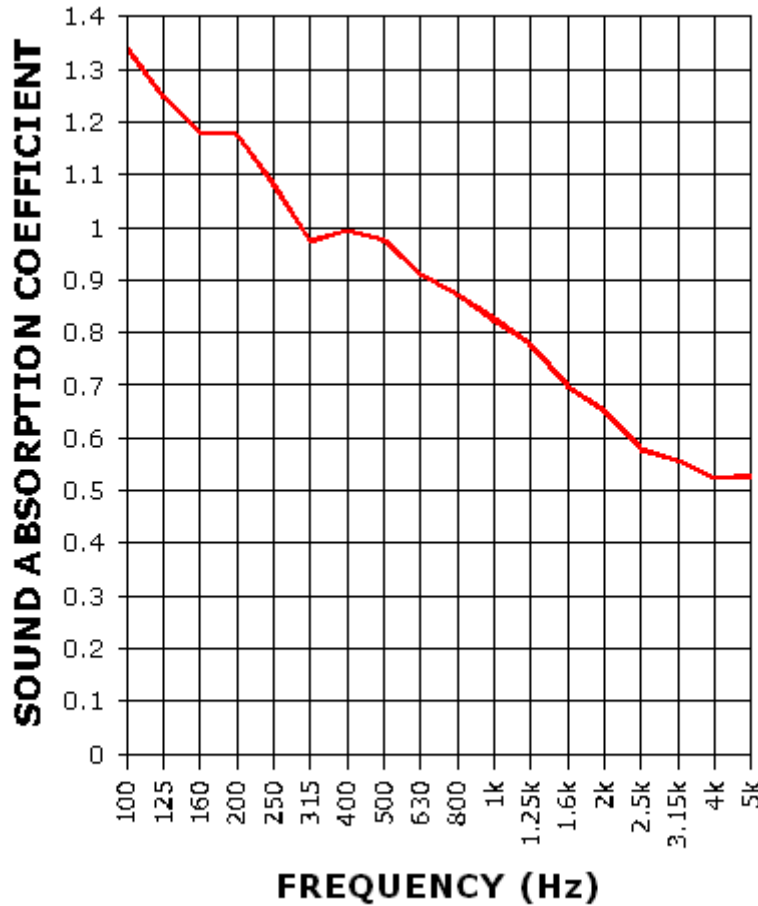
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SOUND ABSORPTION REPORT  
D-GIK Panels



SAA = 0.88  
NRC = 0.90



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### **APPENDIX A: Extended Frequency Range Data**

Specimen: D-GIK Panels (See Full Report)

*The following non-accredited data were obtained in accordance with ASTM C423-09a, but extend beyond the defined frequency range of 100Hz to 5,000Hz. These unofficial results are representative of the RAL test environment only and intended for research & comparison purposes.*

| 1/3 Octave Band<br>Center Frequency<br>(Hz) | Total Absorption<br>(Sabins) | Absorption<br>Coefficient<br>(Sabins / ft <sup>2</sup> ) |
|---|------------------------------|--|
| 31.5  | 11.96                        | 0.19   |
| 40  | 10.36                        | 0.16   |
| 50  | 1.36                         | 0.02   |
| 63  | 25.96                        | 0.41   |
| 80  | 26.56                        | 0.42   |
| 100   | 84.77                        | 1.34   |
| 125   | 78.97                        | 1.25   |
| 160   | 74.70                        | 1.18   |
| 200   | 74.48                        | 1.18   |
| 250   | 68.45                        | 1.08   |
| 315   | 61.59                        | 0.97   |
| 400   | 62.91                        | 0.99   |
| 500   | 61.79                        | 0.98   |
| 630   | 57.62                        | 0.91   |
| 800   | 55.19                        | 0.87   |
| 1000  | 52.25                        | 0.83   |
| 1250  | 49.13                        | 0.78   |
| 1600  | 44.24                        | 0.70   |
| 2000  | 41.31                        | 0.65   |
| 2500  | 36.62                        | 0.58   |
| 3150  | 35.23                        | 0.56   |
| 4000  | 33.07                        | 0.52   |
| 5000  | 33.44                        | 0.53   |
| 6300  | 33.54                        | 0.53   |
| 8000  | 35.32                        | 0.56   |
| 10000                                       | 33.88                        | 0.54   |
| 12500                                       | 35.41                        | 0.56   |



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### APPENDIX B: Instruments of Traceability

Specimen: D-GIK Panels (See Full Report)

| <u>Description</u>                     | <u>Model</u>    | <u>Serial Number</u> | <u>Date of Certification</u> | <u>Calibration Due</u> |
|--|-----------------|----------------------|------------------------------|------------------------|
| Bruel & Kjaer Pulse Analyzer - System3 | Type 3560-C     | 2647140              | 2016-04-12                   | 2017-04-12             |
| Bruel & Kjaer Mic And Preamp C         | Type 4943-B-001 | 2311439              | 2016-03-17                   | 2017-03-17             |
| Bruel & Kjaer Pistonphone              | Type 4228       | 2781248              | 2016-07-25                   | 2017-07-25             |
| Bruel & Kjaer type 4228                | UZ 0004         | 27812248             | 2016-07-25                   | 2017-07-25             |

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