

627 RIVERBANK DRIVE  
GENEVA, IL 60134  
630-232-0104

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FOUNDED 1918 BY  
WALLACE CLEMENT SABINE

## Test Report

SPONSOR: **Kirei**  
Solana Beach, CA

**Sound Absorption**  
**RAL™-A19-153**

CONDUCTED: 2019-04-09

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ON: Ridge ACT panels

### TEST METHODOLOGY

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 C423-17: "Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method." The specimen mounting was performed according to ASTM E795-16: "Standard Practices for Mounting Test Specimens During Sound Absorption Tests." A description of the measurement procedure and room specifications are available upon request. The results presented in this report apply to the sample as received from the test sponsor.

### INFORMATION PROVIDED BY SPONSOR

The test specimen was designated by the sponsor as Ridge ACT panels. The following nominal product information was provided by the sponsor prior to testing. The accuracy of such sponsor-provided information can affect the validity of the test results.

#### Product Under Test

Trade Name: Ridge ACT  
Manufacturer: Kirei

### SPECIMEN MEASUREMENTS & TEST CONDITIONS

Through a full external visual inspection performed on the test specimen, Riverbank personnel verified the following information:

#### Test Specimen

Material: Felt panels  
Dimensions: 16 @ 584.2 mm (23 in.) x 584.2 mm (23 in.)  
14 @ 196.85 mm (7.75 in.) x 101.6 mm (4 in.)  
4 @ 393.7 mm (15.5 in.) x 584.2 mm (23 in.)  
Key Geometry: 12 mm (0.472 in.) thick felt panels folded to create sawtooth depth profile over flat backer  
Sawtooth features spaced 193.68 mm (7.625 in.) on center  
Thickness: Maximum @ 111.12 mm (4.375 in.)  
Installation: Mounted with ridges parallel between panels  
Chamfered ends result in maximum 63.5 mm (2.5 in.) wide gaps between sawtooth features at panel edges  
Overall Weight: 35.61 kg (78.5 lbs)

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### Overall Specimen Properties

Size: 2.73 m (107.5 in) wide by 2.44 m (96.0 in) long  
Thickness: 0.11 m (4.375 in)  
Weight: 35.61 kg (78.5 lbs)  
Mass per Unit Area: 5.35 kg/m<sup>2</sup> (1.1 lbs/ft<sup>2</sup>)  
Calculation Area: 6.658 m<sup>2</sup> (71.67 ft<sup>2</sup>)

### Test Environment

Room Volume: 291.98 m<sup>3</sup>  
Temperature: 21.4 °C ± 0.1 °C (Requirement: ≥ 10 °C and ≤ 5 °C change)  
Relative Humidity: 66.3 % ± 0.0 % (Requirement: ≥ 40 % and ≤ 5 % change)  
Barometric Pressure: 98.4 kPa (Requirement not defined)

### MOUNTING METHOD

Type A Mounting: The test specimen was laid directly against the test surface. Perimeter edges were sealed with metal framing.

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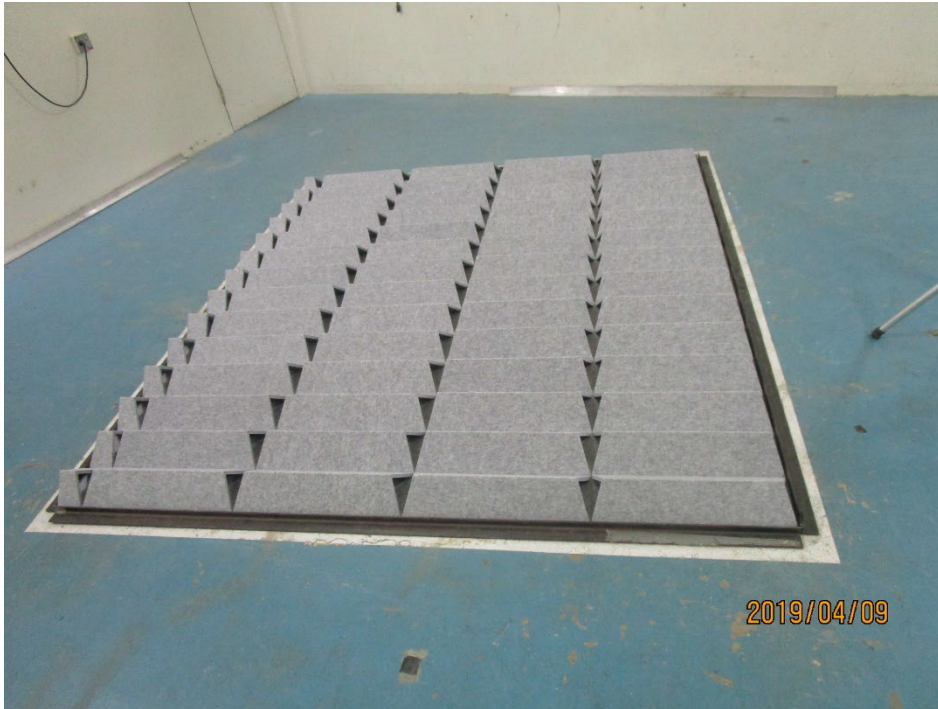


Figure 1 – Specimen mounted in test chamber

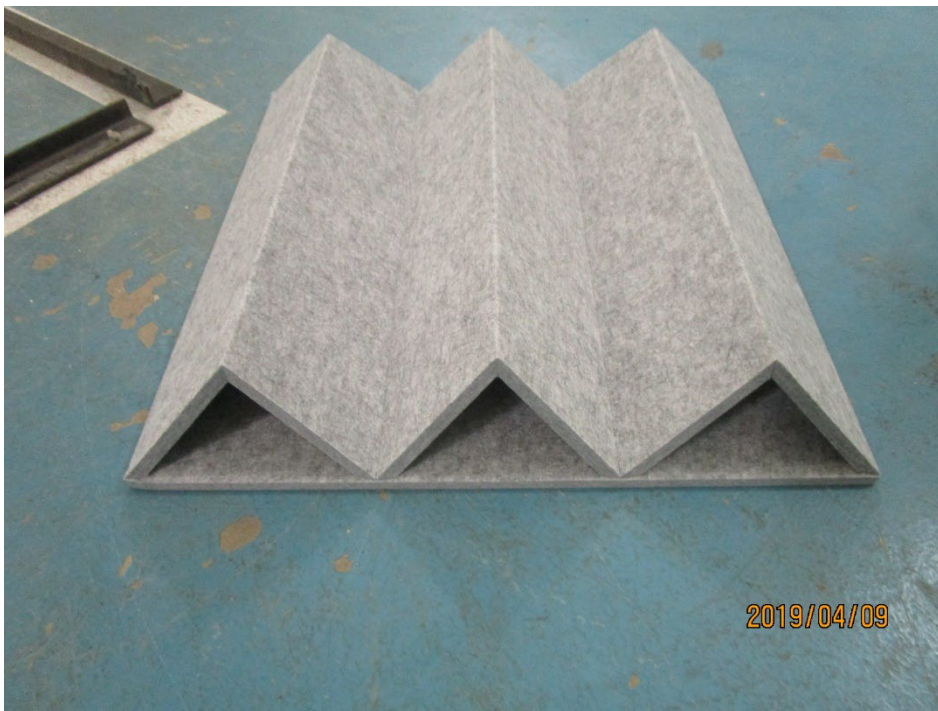


Figure 2 – Individual panel, front view

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Figure 3 – Individual panel, side view

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### TEST RESULTS

Specimen total absorption and absorption coefficient are tabulated at the eighteen standard frequencies. A graphic presentation of the data and additional information appear on the following pages.

1/3 Octave Center Frequency (Hz)	Total Absorption (m <sup>2</sup> )	Total Absorption (Sabins)	Absorption Coefficient
100	1.52	16.34	0.23
** 125	1.22	13.14	0.18
160	1.84	19.84	0.28
200	2.89	31.12	0.43
** 250	3.47	37.36	0.52
315	4.85	52.16	0.73
400	5.93	63.86	0.89
** 500	7.31	78.69	1.10
630	7.91	85.11	1.19
800	7.85	84.52	1.18
** 1000	7.48	80.52	1.12
1250	7.39	79.59	1.11
1600	7.43	79.95	1.12
** 2000	7.38	79.38	1.11
2500	7.36	79.23	1.11
3150	7.15	76.94	1.07
** 4000	7.44	80.06	1.12
5000	7.46	80.29	1.12

**SAA = 0.97**  
**NRC = 0.95**

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### TEST RESULTS (continued)

The sound absorption average (SAA) is defined in ASTM C423-17 Section 3.1.1 as the arithmetic average of the sound absorption coefficients of a material for the twelve one-third octave bands from 200 Hz through 2500 Hz, inclusive, rounded to the nearest integer multiple of 0.01.


The noise reduction coefficient (NRC) is defined from previous versions of ASTM C423 as the arithmetic average of the sound absorption coefficients at 250 Hz, 500 Hz, 1000 Hz, and 2000 Hz, rounded to the nearest integer multiple of 0.05.

Tested by

  
Dean Victor

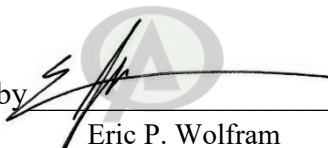
*Lead Experimentalist*

Report by

  
Malcolm Kelly

*Acoustical Test Engineer*

Approved by

  
Eric P. Wolfram

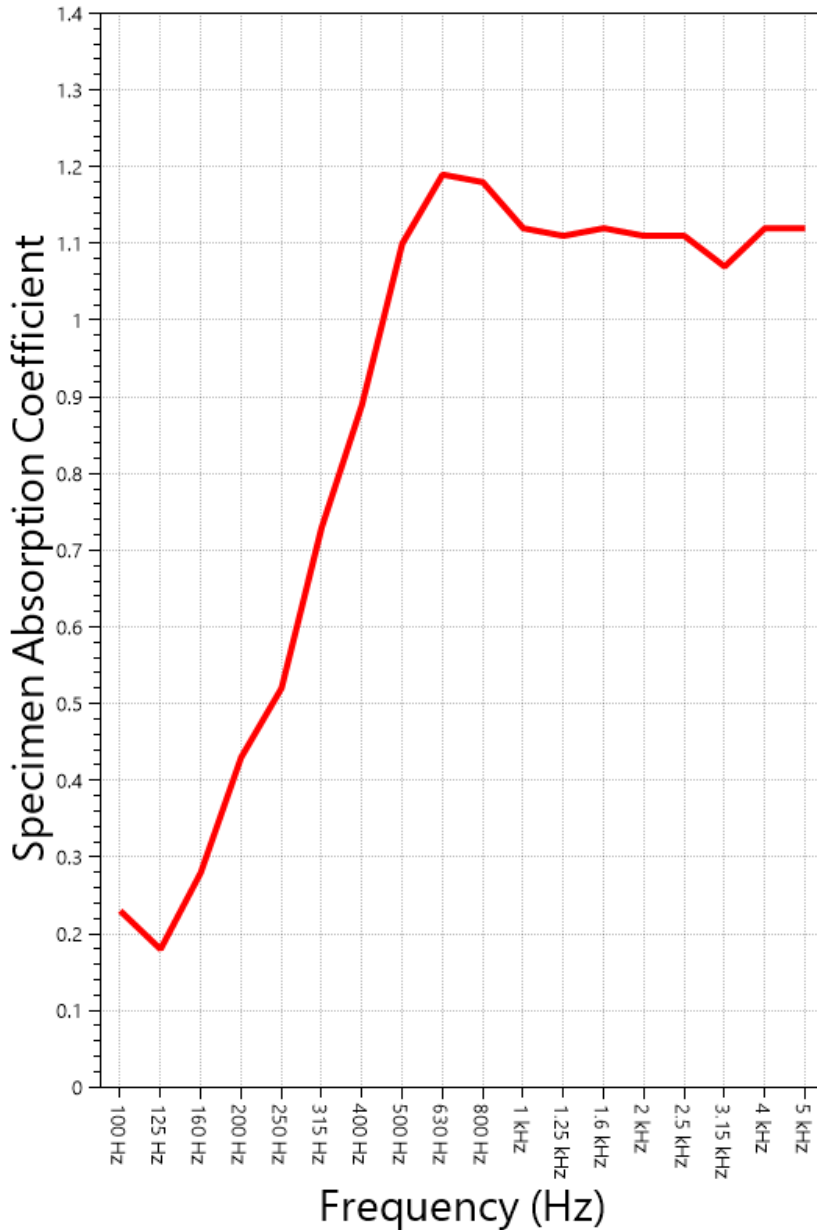
*Laboratory Manager*

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Test Report

SOUND ABSORPTION REPORT  
Ridge ACT panels



**SAA = 0.97**  
**NRC = 0.95**

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### APPENDIX A: Extended Frequency Range Data

Specimen: Ridge ACT panels (See Full Report)

*The following non-accredited data were obtained in accordance with ASTM C423-17, 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 Center Frequency (Hz)	Total Absorption (Sabins)	Absorption Coefficient
31.5	3.72	0.05
40	6.89	0.10
50	8.68	0.12
63	-2.49	-0.03
80	-1.53	-0.02
<hr/>		
100	16.34	0.23
125	13.14	0.18
160	19.84	0.28
200	31.12	0.43
250	37.36	0.52
315	52.16	0.73
400	63.86	0.89
500	78.69	1.10
630	85.11	1.19
800	84.52	1.18
1000	80.52	1.12
1250	79.59	1.11
1600	79.95	1.12
2000	79.38	1.11
2500	79.23	1.11
3150	76.94	1.07
4000	80.06	1.12
5000	80.29	1.12
<hr/>		
6300	83.98	1.17
8000	83.41	1.16
10000	82.77	1.15
12500	84.38	1.18

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### APPENDIX B: Instruments of Traceability

Specimen: Ridge ACT panels (See Full Report)

<u>Description</u>	<u>Model</u>	<u>Serial Number</u>	<u>Date of Certification</u>	<u>Calibration Due</u>
System 1	Type 3160-A-042	3160-106968	2018-08-09	2019-08-09
Bruel & Kjaer Mic And Preamp A	Type 4943-B-001	2311428	2018-09-28	2019-09-28
Bruel & Kjaer Pistonphone	Type 4228	2781248	2018-08-06	2019-08-06
EXTECH Hygro 662	SD700	A083662	2018-11-29	2019-11-29

### APPENDIX C: Revisions to Original Test Report

Specimen: Ridge ACT panels (See Full Report)

<u>Date</u>	<u>Revision</u>
2019-04-18	Original report issued
2026-01-21	All Pages: Product designation changed to Ridge ACT (formerly EchoRidge) to facilitate sponsor's revised product identification. -EPW

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END