

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

## Test Report

[www.riverbankacoustics.com](http://www.riverbankacoustics.com)

FOUNDED 1918 BY  
WALLACE CLEMENT SABINE

SPONSOR: **Kirei**  
San Diego, CA

**Sound Absorption**  
**RAL™-A24-059**

CONDUCTED: 2024-02-01

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ON: 24mm Hexa Screen

### 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 17025:2017 Laboratory (NVLAP Lab Code: 100227-0) and for this test procedure. The test reported in this document conformed explicitly with ASTM C423-23: "Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method." The specimen mounting was performed according to ASTM E795-23: "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 24mm Hexa Screen. 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**

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Product Name: 24mm Hexa Screen  
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**

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Material: PET felt screen  
Dimensions: 1165 mm (45.875 in.) by 2743 mm (108 in.)  
Thickness: 23.74 mm (0.9345 in.)  
Overall Weight: 7.26 kg (16 lbs)

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### Overall Specimen Properties

Size: 1.17 m (45.875 in) wide by 2.74 m (108.0 in) long  
Thickness: 0.02 m (0.9345 in)  
Weight: 7.26 kg (16.0 lbs)  
Mass per Unit Area: 2.27 kg/m<sup>2</sup> (0.47 lbs/ft<sup>2</sup>)  
Calculation Area: 6.393 m<sup>2</sup> (68.81 ft<sup>2</sup>)

### Test Environment

Room Volume: 291.98 m<sup>3</sup>  
Temperature: 21.5 °C ± 0.1 °C (Requirement: ≥ 10 °C and ≤ 5 °C change)  
Relative Humidity: 58.45 % ± 2.5 % (Requirement: ≥ 40 % and ≤ 5 % change)  
Barometric Pressure: 98.4 kPa (Requirement not defined)

### MOUNTING METHOD

Type K Mounting: The specimen was placed in the reverberation room in an upright position at an oblique angle to and at least 1.52 m (60 in.) from all walls. Per sponsor request, the perimeter edges were left exposed, as would be typical of a field installation of the product under test.

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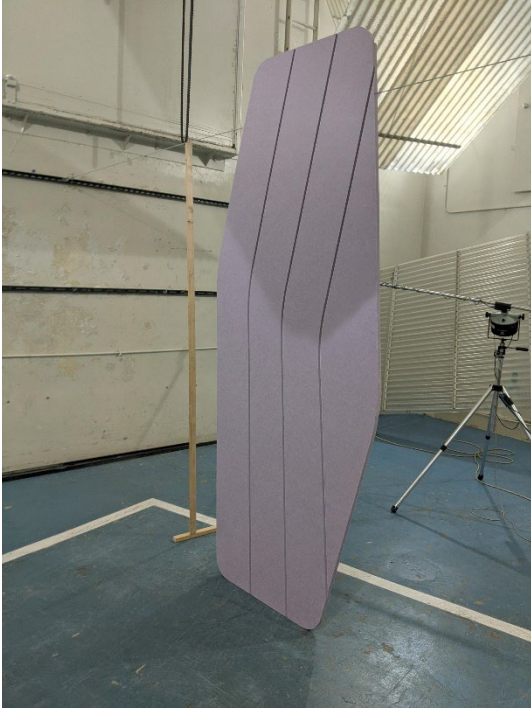


Figure 1 – Specimen mounted in test chamber

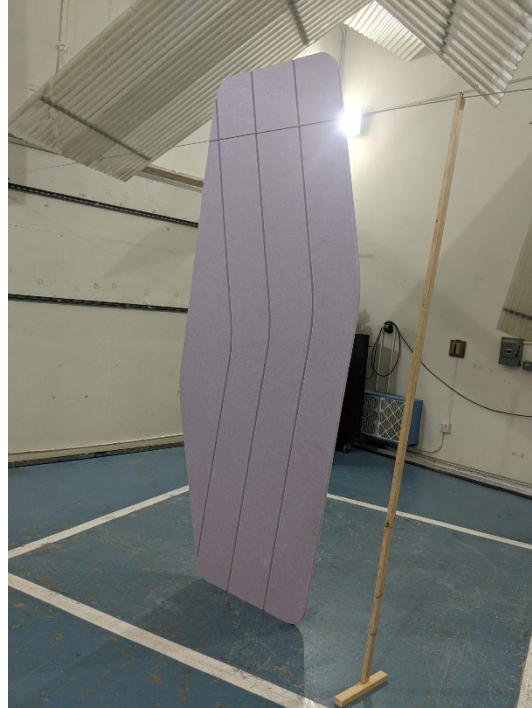


Figure 2 – Detail of specimen material

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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	1.44	15.51	0.23
** 125	1.52	16.38	0.24
160	1.72	18.56	0.27
200	2.07	22.28	0.32
** 250	2.03	21.80	0.32
315	2.32	24.96	0.36
400	2.66	28.67	0.42
** 500	2.87	30.86	0.45
630	3.28	35.30	0.51
800	3.58	38.52	0.56
** 1000	3.99	42.99	0.62
1250	4.44	47.75	0.69
1600	4.63	49.84	0.72
** 2000	4.78	51.45	0.75
2500	5.05	54.31	0.79
3150	4.92	52.96	0.77
** 4000	5.13	55.27	0.80
5000	5.19	55.85	0.81

**SAA = 0.54**  
**NRC = 0.55**

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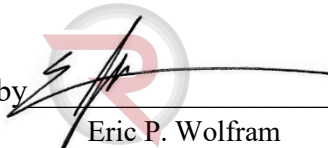
### TEST RESULTS (continued)

The sound absorption average (SAA) is defined in ASTM C423-23 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   
Marc Sciaky  
Senior Experimentalist

Report by   
Keith Kimberling  
Test Engineer

Approved by   
Eric P. Wolfram  
Laboratory Manager

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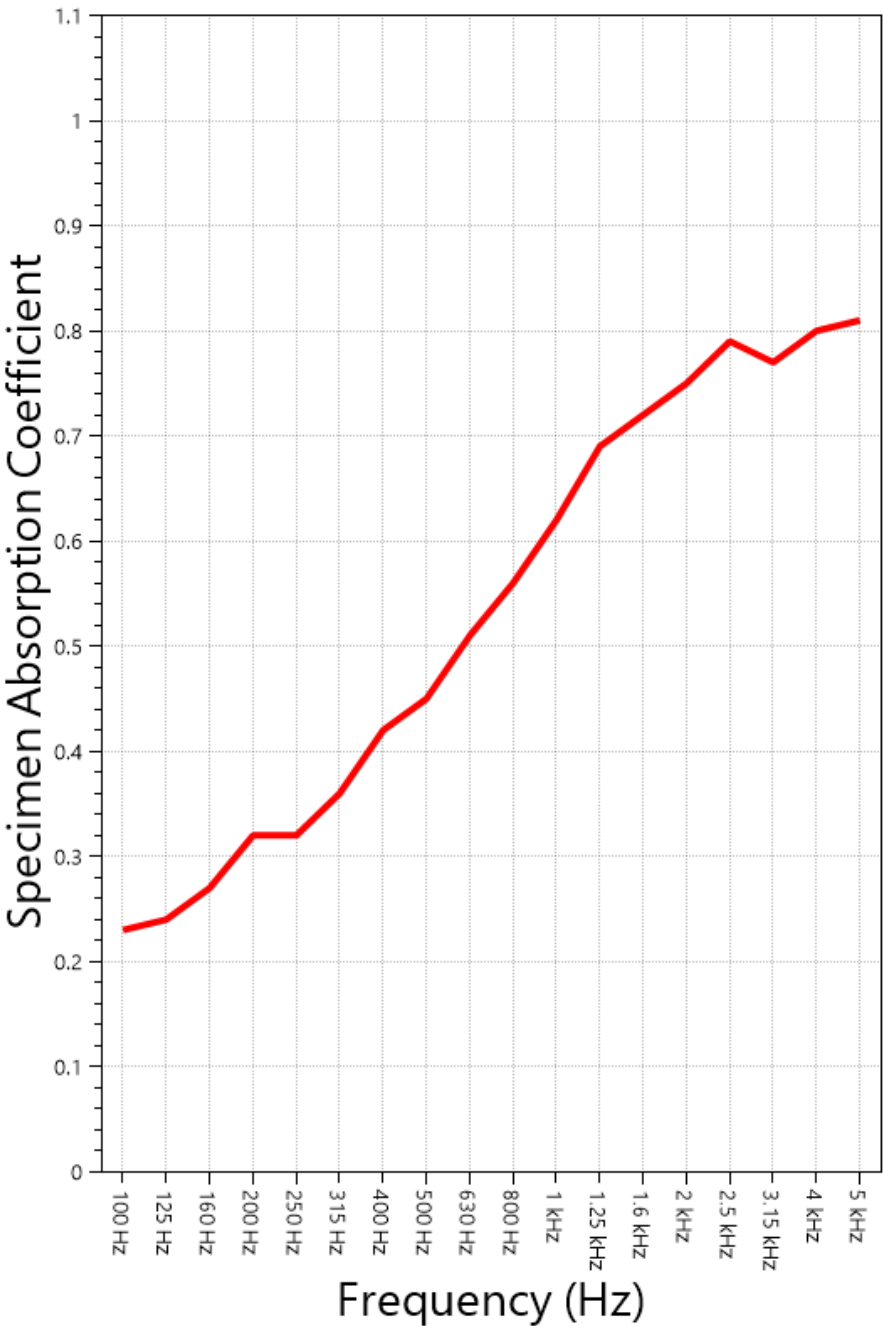
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SOUND ABSORPTION REPORT  
24mm Hexa Screen



**SAA = 0.54**  
**NRC = 0.55**



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**APPENDIX A: Extended Frequency Range Data**

Specimen: 24mm Hexa Screen (See Full Report)

*The following non-accredited data were obtained in accordance with ASTM C423-23, 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	3.48	0.05
40	-1.08	-0.02
50	-5.75	-0.08
63	19.97	0.29
80	-2.28	-0.03
100	15.51	0.23
125	16.38	0.24
160	18.56	0.27
200	22.28	0.32
250	21.80	0.32
315	24.96	0.36
400	28.67	0.42
500	30.86	0.45
630	35.30	0.51
800	38.52	0.56
1000	42.99	0.62
1250	47.75	0.69
1600	49.84	0.72
2000	51.45	0.75
2500	54.31	0.79
3150	52.96	0.77
4000	55.27	0.80
5000	55.85	0.81
6300	56.65	0.82
8000	54.24	0.79
10000	53.40	0.78
12500	49.72	0.72

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**APPENDIX B: Instruments of Traceability**

Specimen: 24mm Hexa Screen (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	2023-07-17	2024-07-17
Bruel & Kjaer Mic And Preamp G	Type 4943-B-001	2525858	2023-05-03	2024-05-03
Bruel & Kjaer Pistonphone	Type 4228	2781248	2023-07-12	2024-07-12
EXTECH Hygro 6015	SD700	A.116015	2023-05-31	2024-05-31

**APPENDIX C: Revisions to Original Test Report**

Specimen: 24mm Hexa Screen (See Full Report)

<u>Date</u>	<u>Revision</u>
2024-02-06	Original report issued

END