

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

Test Report

www.riverbankacoustics.com

FOUNDED 1918 BY
WALLACE CLEMENT SABINE

SPONSOR: **Kirei**
San Diego, CA

Sound Absorption
RAL™-A24-060

CONDUCTED: 2024-02-01

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ON: 12mm 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 12mm 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

Product Name: 12mm 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

Material: PET felt screen
Dimensions: 1168 mm (46 in.) by 2743 mm (108 in.)
Thickness: 12.32 mm (0.485 in.)
Overall Weight: 6.35 kg (14 lbs)

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Overall Specimen Properties

Size: 1.17 m (46.0 in) wide by 2.74 m (108.0 in) long
Thickness: 0.01 m (0.485 in)
Weight: 6.35 kg (14.0 lbs)
Mass per Unit Area: 1.98 kg/m² (0.41 lbs/ft²)
Calculation Area: 6.41 m² (69. ft²)

Test Environment

Room Volume: 291.98 m³
Temperature: 21.5 °C ± 0.1 °C (Requirement: ≥ 10 °C and ≤ 5 °C change)
Relative Humidity: 58.6 % ± 3.2 % (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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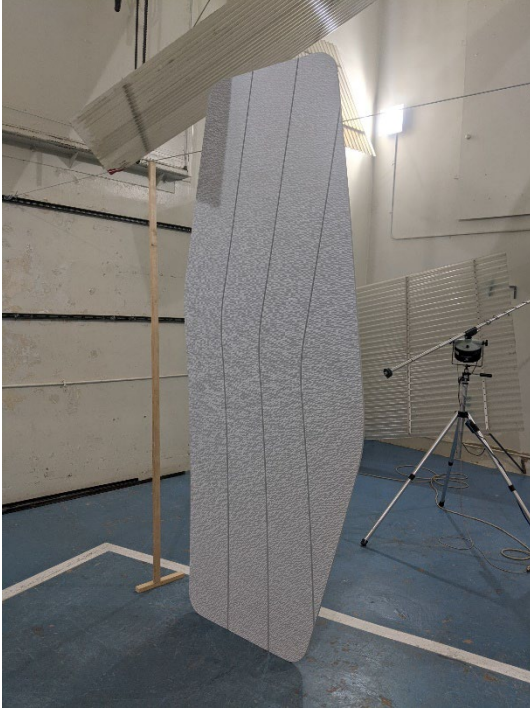


Figure 1 – Specimen mounted in test chamber



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 ²)	Total Absorption (Sabins)	Absorption Coefficient
100	0.93	10.03	0.15
** 125	1.11	11.91	0.17
160	1.28	13.80	0.20
200	1.86	19.98	0.29
** 250	2.11	22.67	0.33
315	2.21	23.82	0.35
400	2.39	25.72	0.37
** 500	2.56	27.59	0.40
630	2.64	28.43	0.41
800	2.87	30.88	0.45
** 1000	3.17	34.09	0.49
1250	3.51	37.79	0.55
1600	3.88	41.82	0.61
** 2000	4.21	45.32	0.66
2500	4.39	47.27	0.69
3150	4.45	47.94	0.69
** 4000	4.68	50.33	0.73
5000	4.72	50.84	0.74

SAA = 0.47
NRC = 0.45

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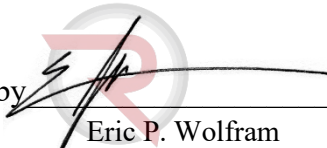
TEST RESULTS (continued)

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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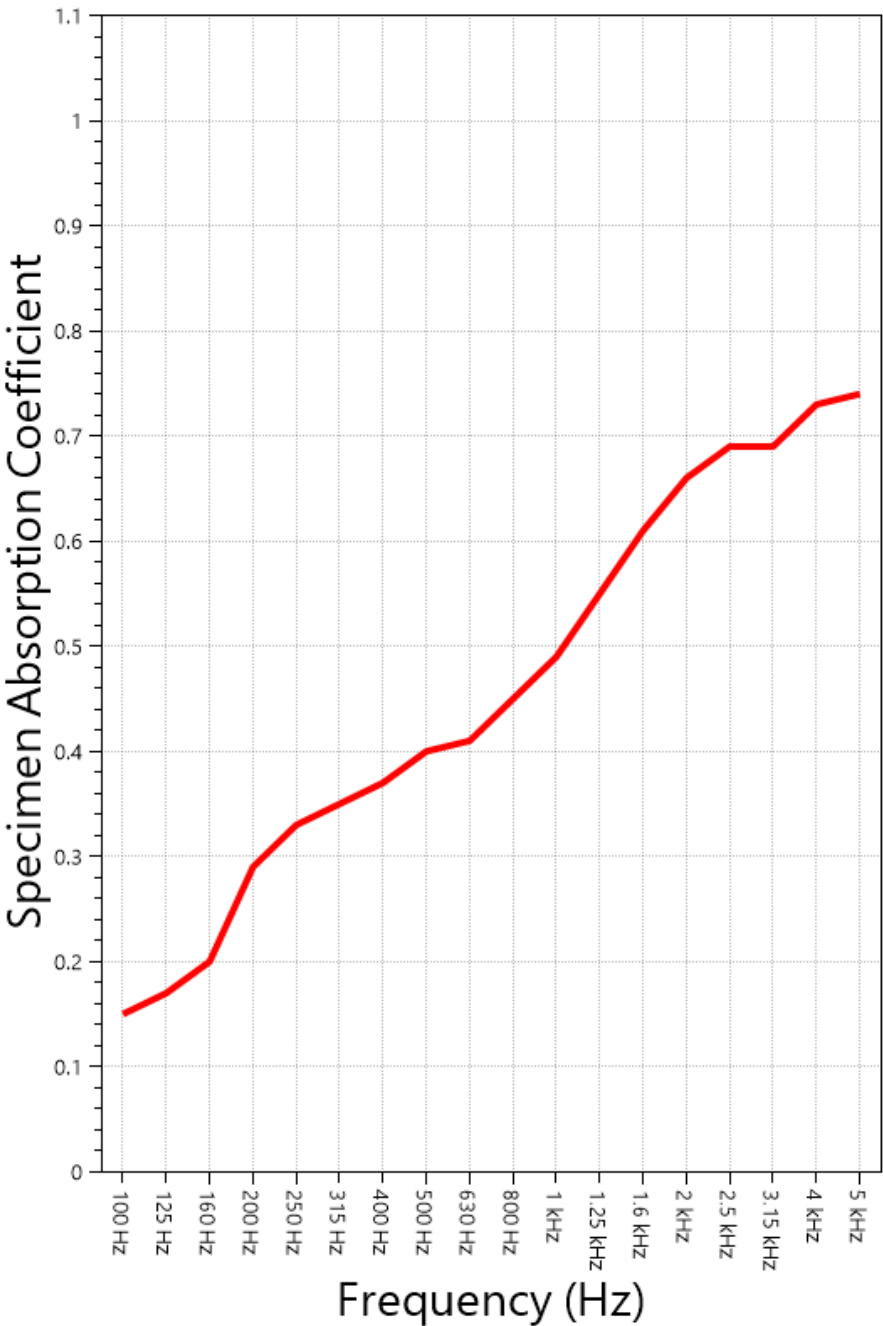
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SOUND ABSORPTION REPORT
12mm Hexa Screen



SAA = 0.47
NRC = 0.45

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APPENDIX A: Extended Frequency Range Data

Specimen: 12mm 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	2.12	0.03
40	-0.09	0.00
50	-0.60	-0.01
63	19.10	0.28
80	-6.71	-0.10
100	10.03	0.15
125	11.91	0.17
160	13.80	0.20
200	19.98	0.29
250	22.67	0.33
315	23.82	0.35
400	25.72	0.37
500	27.59	0.40
630	28.43	0.41
800	30.88	0.45
1000	34.09	0.49
1250	37.79	0.55
1600	41.82	0.61
2000	45.32	0.66
2500	47.27	0.69
3150	47.94	0.69
4000	50.33	0.73
5000	50.84	0.74
6300	50.82	0.74
8000	52.69	0.76
10000	50.57	0.73
12500	45.56	0.66

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APPENDIX B: Instruments of Traceability

Specimen: 12mm 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: 12mm Hexa Screen (See Full Report)

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

END