

1512 S BATAVIA AVENUE
GENEVA, IL 60134
630-232-0104

Test Report

www.riverbankacoustics.com

FOUNDED 1918 BY
WALLACE CLEMENT SABINE

SPONSOR: **Genesis Products**
Elkhart, IN

Sound Absorption
RAL™-A22-330

CONDUCTED: 2022-08-05

Page 1 of 9

ON: 1" Drop Tiles with 1" Fill

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 C423-22: "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 1" Drop Tiles with 1" Fill. 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:	1" Drop Tiles with 1" Fill
Face Finish/Fabric:	Polyester Fiber
Core Material:	Polyester Fiber
Backing:	1" Lofted Polyester Fiber
Air Space Depth:	400 mm
Tile/Panel Dimensions:	2' by 2'
Manufacturer:	Genesis Products

1512 S BATAVIA AVENUE
GENEVA, IL 60134
630-232-0104

Test Report

www.riverbankacoustics.com

FOUNDED 1918 BY
WALLACE CLEMENT SABINE

Genesis Products
2022-08-05

RAL™-A22-330
Page 2 of 9

SPECIMEN MEASUREMENTS & TEST CONDITIONS

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

Drop Tiles

Dimensions: 16 tiles @ 603 mm (23.75 in.) by 603 mm (23.75 in.)
Thickness: 28.04 mm (1.104 in.)
Overall Weight: 8.39 kg (18.5 lbs)
Mass per Unit Area: 1.44 kg/m² (0.295 lbs/ft²)

1" Fill

Dimensions: 16 pieces @ 584 mm (23 in.) by 584 mm (23 in.)
Thickness: 22.97 mm (0.9045 in.)
Overall Weight: 5.67 kg (12.5 lbs)
Mass per Unit Volume: 45.2 kg/m³ (2.82 lbs/ft³)
Installation: 1 piece attached to each drop tile with two straps each

Flat Tiles

Dimensions: 4 tiles @ 330 mm (13 in.) by 603 mm (23.75 in.)
Thickness: 4.41 mm (0.1735 in.)
Overall Weight: 0.91 kg (2 lbs)
Mass per Unit Volume: 1.14 kg/m² (0.233 lbs/ft²)

1512 S BATAVIA AVENUE
GENEVA, IL 60134
630-232-0104

Test Report

www.riverbankacoustics.com

FOUNDED 1918 BY
WALLACE CLEMENT SABINE

Genesis Products
2022-08-05

RAL™-A22-330
Page 3 of 9

Overall Specimen Properties

Size: 2.74 m (108.0 in) wide by 2.41 m (95.0 in) long
Thickness: 0.04 m (1.5 in)
Weight: 14.97 kg (33.0 lbs)
Mass per Unit Area: 2.26 kg/m² (0.46 lbs/ft²)
Calculation Area: 6.619 m² (71.25 ft²)

Test Environment

Room Volume: 291.98 m³
Temperature: 21.8 °C ± 0.0 °C (Requirement: ≥ 10 °C and ≤ 5 °C change)
Relative Humidity: 56.45 % ± 0.1 % (Requirement: ≥ 40 % and ≤ 5 % change)
Barometric Pressure: 99.0 kPa (Requirement not defined)

MOUNTING METHOD

Type E-445 Mounting: The test specimen was mounted across a metal fixture which was open at its top and bottom and enclosed at its sides, creating an enclosed airspace between the test specimen and the horizontal test surface. The numeral suffix in the designation is defined in ASTM E795-16 as the distance in millimeters from the exposed face of the test specimen to the test surface, rounded to the nearest integer multiple of 5. For the purposes of this report, the mounting designation uses the top faces of the specimen drop tiles as a reference datum. Perimeter edges were sealed with metal framing.

1512 S BATAVIA AVENUE
GENEVA, IL 60134
630-232-0104

Test Report

www.riverbankacoustics.com

FOUNDED 1918 BY
WALLACE CLEMENT SABINE

Genesis Products
2022-08-05

RAL™-A22-330
Page 4 of 9

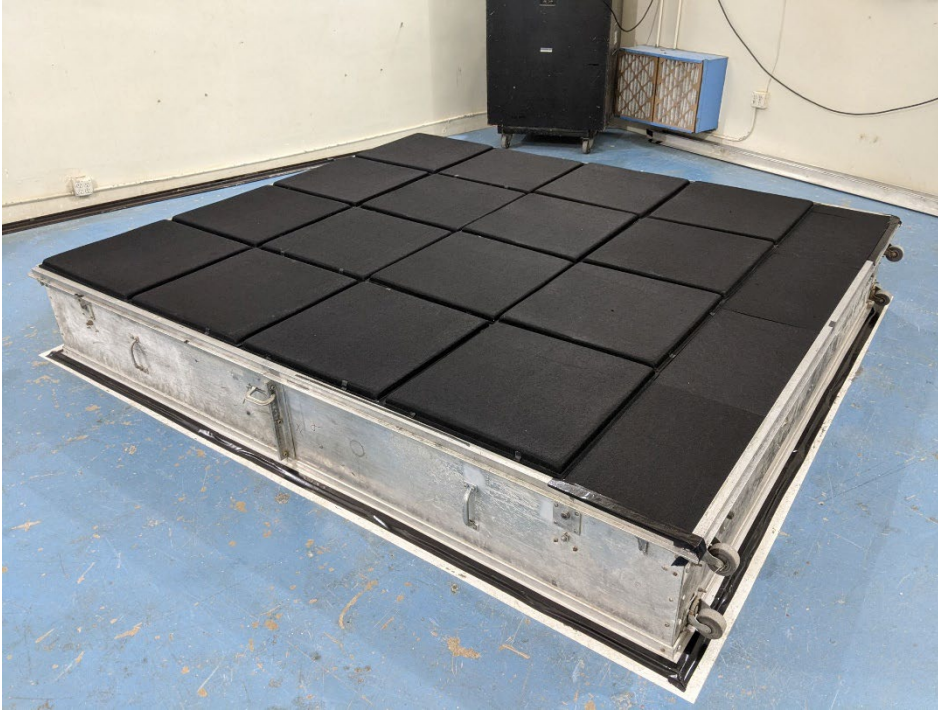


Figure 1 – Specimen mounted in test chamber



Figure 2 – Detail of 1” fill attached to specimen drop panel with straps

1512 S BATAVIA AVENUE
GENEVA, IL 60134
630-232-0104

Test Report

www.riverbankacoustics.com

FOUNDED 1918 BY
WALLACE CLEMENT SABINE

Genesis Products
2022-08-05

RAL™-A22-330
Page 5 of 9

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	6.04	65.03	0.91
** 125	6.85	73.71	1.03
160	5.57	59.98	0.84
200	6.95	74.79	1.05
** 250	6.74	72.53	1.02
315	6.07	65.34	0.92
400	5.20	55.97	0.79
** 500	4.97	53.51	0.75
630	6.06	65.19	0.91
800	6.03	64.91	0.91
** 1000	6.21	66.82	0.94
1250	6.32	68.06	0.96
1600	6.76	72.80	1.02
** 2000	6.91	74.37	1.04
2500	6.92	74.52	1.05
3150	6.90	74.24	1.04
** 4000	6.79	73.06	1.03
5000	7.06	76.04	1.07

SAA = 0.95

NRC = 0.95

1512 S BATAVIA AVENUE
GENEVA, IL 60134
630-232-0104

Test Report

www.riverbankacoustics.com

FOUNDED 1918 BY
WALLACE CLEMENT SABINE

Genesis Products
2022-08-05

RAL™-A22-330
Page 6 of 9

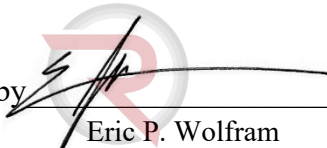
TEST RESULTS (continued)

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 
Marc Sciaky
Senior Experimentalist

Report by 
Keith Kimberling
Test Engineer

Approved by 
Eric P. Wolfram
Laboratory Manager

1512 S BATAVIA AVENUE
GENEVA, IL 60134
630-232-0104

Test Report

www.riverbankacoustics.com

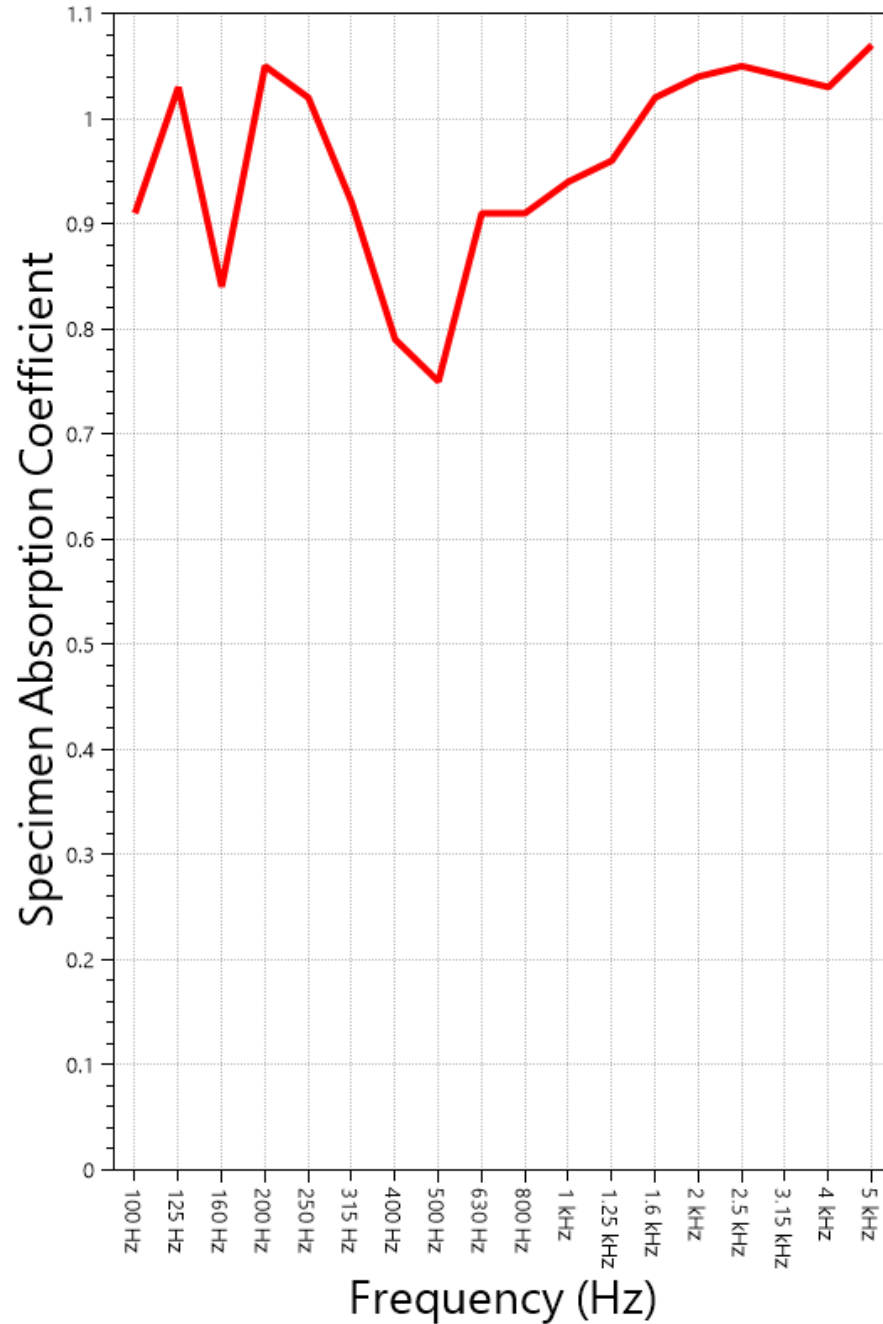
FOUNDED 1918 BY
WALLACE CLEMENT SABINE

Genesis Products
2022-08-05

RAL™-A22-330
Page 7 of 9

SOUND ABSORPTION REPORT

1" Drop Tiles with 1" Fill



SAA = 0.95

NRC = 0.95



NVLAP LAB CODE 100227-0

RIVERBANK ACOUSTICAL LABORATORIES IS ACCREDITED BY NVLAP (LAB CODE 100227-0) FOR ACOUSTICAL TESTING SERVICES IN ACCORDANCE WITH ISO/IEC 17025:2017 AND FOR THIS PROCEDURE. THIS REPORT MUST NOT BE USED BY THE CLIENT TO CLAIM PRODUCT CERTIFICATION, APPROVAL, OR ENDORSEMENT BY RAL, NVLAP, NIST, OR ANY AGENCY OF THE U.S. GOVERNMENT. THIS REPORT SHALL NOT BE MODIFIED WITHOUT THE WRITTEN APPROVAL OF RAL. THE RESULTS REPORTED APPLY ONLY TO THE SPECIFIC SAMPLE SUBMITTED FOR TESTING; RAL ASSUMES NO RESPONSIBILITY FOR THE PERFORMANCE OF ANY OTHER SAMPLE.

1512 S BATAVIA AVENUE
GENEVA, IL 60134
630-232-0104

Test Report

www.riverbankacoustics.com

FOUNDED 1918 BY
WALLACE CLEMENT SABINE

Genesis Products
2022-08-05

RAL™-A22-330
Page 8 of 9

APPENDIX A: Extended Frequency Range Data

Specimen: 1" Drop Tiles with 1" Fill (See Full Report)

The following non-accredited data were obtained in accordance with ASTM C423-22, 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	31.01	0.44
40	8.33	0.12
50	24.53	0.34
63	19.88	0.28
80	37.62	0.53
100	65.03	0.91
125	73.71	1.03
160	59.98	0.84
200	74.79	1.05
250	72.53	1.02
315	65.34	0.92
400	55.97	0.79
500	53.51	0.75
630	65.19	0.91
800	64.91	0.91
1000	66.82	0.94
1250	68.06	0.96
1600	72.80	1.02
2000	74.37	1.04
2500	74.52	1.05
3150	74.24	1.04
4000	73.06	1.03
5000	76.04	1.07
6300	76.03	1.07
8000	77.05	1.08
10000	74.44	1.04
12500	78.96	1.11

1512 S BATAVIA AVENUE
GENEVA, IL 60134
630-232-0104

Test Report

www.riverbankacoustics.com

FOUNDED 1918 BY
WALLACE CLEMENT SABINE

Genesis Products
2022-08-05

RAL™-A22-330
Page 9 of 9

APPENDIX B: Instruments of Traceability

Specimen: 1" Drop Tiles with 1" Fill (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	2022-07-12	2023-07-12
Bruel & Kjaer Mic And Preamp A	Type 4943-B-001	2311428	2021-09-30	2022-09-30
Bruel & Kjaer Pistonphone	Type 4228	2781248	2022-07-22	2023-07-22
EXTECH Hygro 959	SD700	A099959	2022-03-22	2023-03-22

APPENDIX C: Revisions to Original Test Report

Specimen: 1" Drop Tiles with 1" Fill (See Full Report)

<u>Date</u>	<u>Revision</u>
2022-08-11	Original report issued

END