

Test Report

FOR: **Decorative Ceiling Tiles**
Margate, FL.

Sound Absorption
RAL™-A15-263

CONDUCTED: 2015-09-22

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ON: Micro-Perforated Acoustical Aluminum Ceiling Tile with SoundTex™ - #MPA-1 Over 3.5" R-13 Fiberglass

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 Micro-Perforated Acoustical Aluminum Ceiling Tile with SoundTex™ - #MPA-1 Over 3.5" R-13 Fiberglass. A full internal inspection was performed on the test specimen by Riverbank personnel, verifying the manufacturer's description.

Detail of Ceiling Tiles

First Layer

Material: Micro-perforated, powder coated, aluminum with SoundTex™
Dimensions: Sixteen at 603.25 mm (23.75 in.) wide by 603.25 mm (23.75 in.) long
Material Thickness: 22 gauge, 0.66 mm (0.03 in.)
Perforations:
Diameter: 1.45 mm (0.06 in.)
Pitch: 60° staggered center, 3.0 mm (0.12 in.) on center
Open Area: 21.2% in perforated region

Note: SoundTex™ was adhered to the backside of each ceiling tile. The ceiling tiles were placed over the fiberglass.

Second Layer

Material: R-13 fiberglass batt insulation
Material Thickness: 88.90 mm (3.50 in.)



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Physical Measures

Size: 2.37 m (93.50 in.) wide by 2.74 m (107.75 in.) long
Thickness: 57.15 mm (2.25 in.)
Weight: 17.12 kg (37.75 lbs.)
Mass per Unit Area: 2.64 kg/m² (0.54 lbs/ft²)
Area: 6.50 m² (70.00 ft²)

Test Environment

Volume: 292.0 m³ (10,311.0 ft³)
Temperature: 22.1±0.1°C (71.8±0.2°F)
Humidity: 57.8±0.2%
Barometric Pressure: 99.4 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 E-400 Mounting: The test specimen was mounted with an airspace behind it. The number designates the approximate distance in millimeters from the exposed face of the test specimen to the test surface. The perimeter was sealed using metal framing.

TEST RESULTS

1/3 Octave Center Frequency (Hz)	Total Absorption (SI) (m ²)	Total Absorption (IP) (Sabins)	Absorption Coefficient (Sabins / ft ²)
100	9.35	100.66	1.44
** 125	6.46	69.52	0.99
160	5.98	64.40	0.92
200	6.47	69.66	1.00
** 250	6.49	69.88	1.00
315	6.17	66.38	0.95
400	6.22	66.91	0.96
** 500	7.10	76.40	1.09
630	7.23	77.84	1.11
800	6.99	75.29	1.08
** 1000	7.01	75.49	1.08
1250	6.93	74.58	1.07
1600	6.55	70.49	1.01
** 2000	6.34	68.20	0.97
2500	6.14	66.06	0.94
3150	5.93	63.88	0.91
** 4000	5.71	61.49	0.88
5000	5.21	56.13	0.80

SAA = 1.02
NRC = 1.05



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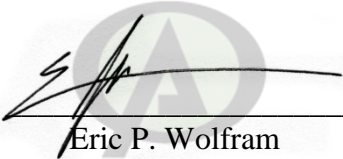
TEST RESULTS (Continued)

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 
Chris Nottoli
Acoustician

Approved by 
Eric P. Wolfram
Laboratory Manager



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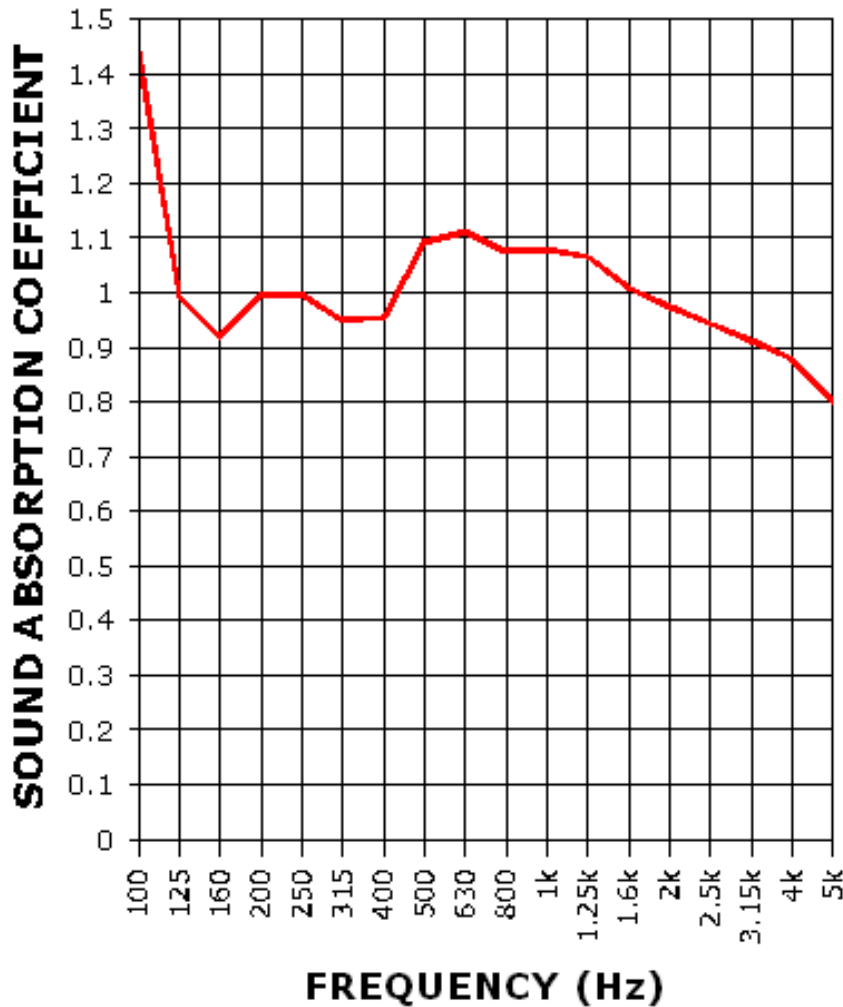
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SOUND ABSORPTION REPORT

Micro-Perforated Acoustical Aluminum Ceiling Tile with SoundTex™ - #MPA-I Over
3.5" R-13 Fiberglass



SAA = 1.02
NRC = 1.05



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APPENDIX A: Extended Frequency Range Data

Specimen: Micro-Perforated Acoustical Aluminum Ceiling Tile with SoundTex™ - #MPA-1 Over 3.5" R-13 Fiberglass (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 Center Frequency (Hz)	Total Absorption (Sabins)	Absorption Coefficient (Sabins / ft ²)
31.5	30.30	0.43
40	23.15	0.33
50	44.15	0.63
63	59.37	0.85
80	59.20	0.85
100	100.66	1.44
125	69.52	0.99
160	64.40	0.92
200	69.66	1.00
250	69.88	1.00
315	66.38	0.95
400	66.91	0.96
500	76.40	1.09
630	77.84	1.11
800	75.29	1.08
1000	75.49	1.08
1250	74.58	1.07
1600	70.49	1.01
2000	68.20	0.97
2500	66.06	0.94
3150	63.88	0.91
4000	61.49	0.88
5000	56.13	0.80
6300	50.65	0.72
8000	41.87	0.60
10000	36.74	0.52
12500	28.00	0.40



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APPENDIX B: Instruments of Traceability

Specimen: Micro-Perforated Acoustical Aluminum Ceiling Tile with SoundTex™ - #MPA-1 Over 3.5" R-13 Fiberglass (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	Type 3560-C	2647140	2015-04-08	2016-04-08
Bruel & Kjaer Mic And Preamp	Type 4943-B-001	2311427	2015-07-27	2016-07-27
G.R.A.S Pistonphone	Type42AF-1	80001	2015-08-14	2016-08-14
Omega Digital Temp., Humid. And Pressure Recorder	OM-CP-PRHTemp2000	N11105	2014-09-30	2015-09-30

END



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