

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

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WALLACE CLEMENT SABINE

Test Report

FOR: **Turf Design**
Elgin, IL

Sound Absorption
RAL™-A18-326

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CONDUCTED: 2018-10-01

ON: Crease tiles, mixed configuration

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 C423-17: "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 measuring procedure and room qualifications is available upon request.

DESCRIPTION OF THE SPECIMEN

The test specimen was designated by the manufacturer as Crease tiles, mixed configuration. A full external visual inspection performed on the test specimen by Riverbank personnel verified the manufacturer's description.

Test Specimen

Trade Name:	Crease
Materials:	Formed polyethylene terephthalate felt
Tile Dimensions:	16 @ 609.6 mm (24 in.) x 609.6 mm (24 in.)
Wall Thickness:	5 mm (0.197 in.)
Tile Type A	
Material ID:	04223
Quantity:	3
Overall Thickness:	Maximum @ 149.22 mm (5.875 in.) Minimum @ 53.97 mm (2.125 in.)
Overall Weight:	2.27 kg (5 lbs)
Tile Type B	
Material ID:	04307
Quantity:	4
Overall Thickness:	Maximum @ 152.4 mm (6 in.) Minimum @ 50.8 mm (2 in.)
Overall Weight:	2.95 kg (6.5 lbs)

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Test Specimen (continued)

Tile Type C

Material ID: 04240

Quantity: 5

Overall Thickness: Maximum @ 155.57 mm (6.125 in.)
Minimum @ 53.97 mm (2.125 in.)

Overall Weight: 3.97 kg (8.75 lbs)

Tile Type D

Material ID: 04226

Quantity: 4

Overall Thickness: Maximum @ 149.22 mm (5.875 in.)
Minimum @ 50.8 mm (2 in.)

Overall Weight: 2.83 kg (6.25 lbs)

Specimen Configuration

(test chamber east wall)

C	C	A	D
A	B	B	C
D	D	C	B
B	C	A	D

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Physical Measures

Size: 2.44 m (96.0 in) wide by 2.44 m (96.0 in) long
Thickness: 0.16 m (6.125 in)
Weight: 12.02 kg (26.5 lbs)
Mass per Unit Area: 2.02 kg/m² (0.41 lbs/ft²)
Calculation Area: 5.946 m² (64 ft²)

Test Environment

Room Volume: 291.98 m³
Temperature: 21.0 °C ± 0.0 °C (Requirement: ≥ 10 °C and ≤ 5 °C change)
Relative Humidity: 65.8 % ± 0.0 % (Requirement: ≥ 40 % and ≤ 5 % change)
Barometric Pressure: 99.3 kPa (Requirement not defined)

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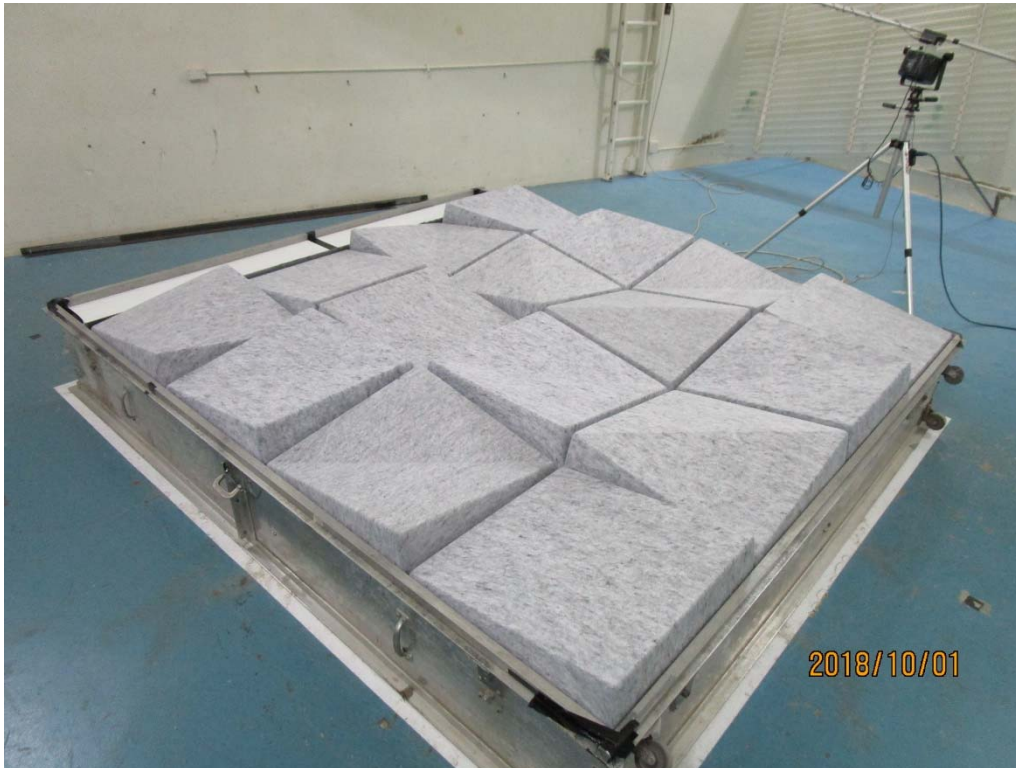


Figure 1 – Specimen mounted in test chamber, as viewed from southwest corner



Figure 2 – (from left to right) Tile types A, D, and B.

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MOUNTING METHOD

Type E-400 Mounting: The test specimen was mounted with an airspace behind it. The number designates the distance in mm 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 point on the specimen face where minimum overall thickness was measured for reference. Perimeter edges were sealed with metal framing.

TEST RESULTS

1/3 Octave Center

Frequency (Hz)	Total Absorption (m ²)	Total Absorption (Sabins)	Absorption Coefficient
100	5.92	63.67	0.99
** 125	7.16	77.03	1.20
160	4.73	50.91	0.80
200	5.74	61.75	0.96
** 250	5.63	60.59	0.95
315	4.79	51.52	0.80
400	4.61	49.64	0.78
** 500	5.17	55.64	0.87
630	5.64	60.70	0.95
800	5.60	60.25	0.94
** 1000	5.73	61.70	0.96
1250	5.78	62.20	0.97
1600	5.70	61.41	0.96
** 2000	5.78	62.17	0.97
2500	5.83	62.72	0.98
3150	5.84	62.90	0.98
** 4000	5.89	63.43	0.99
5000	5.86	63.06	0.99

SAA = 0.92

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 average, rounded to the nearest integer multiple of 0.01, of the sound absorption coefficients of a material for the twelve one-third octave bands from 200 Hz through 2500 Hz, inclusive.

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


Tested by


Marc Sciaky
Experimentalist

Report by


Malcolm Kelly
Acoustician

Approved by


Eric P. Wolfram
Laboratory Manager

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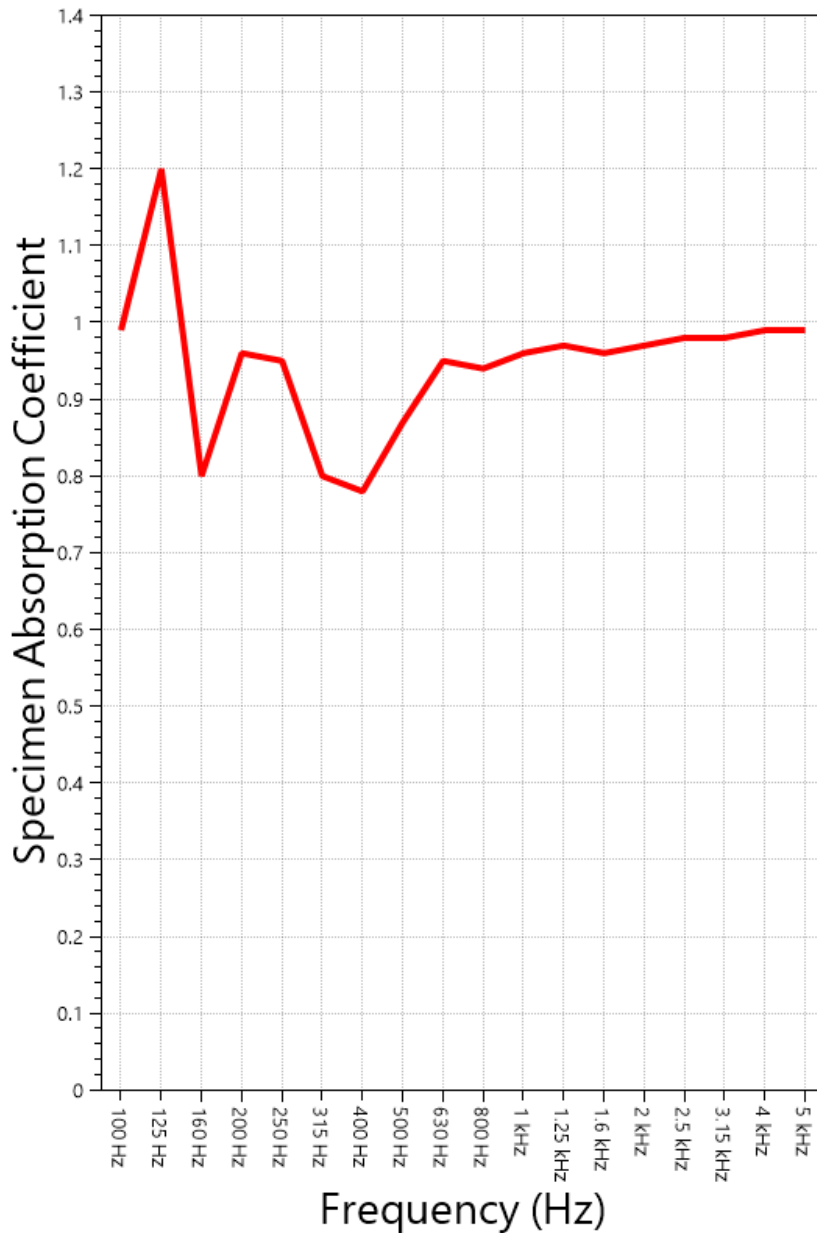
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SOUND ABSORPTION REPORT

Crease tiles, mixed configuration



SAA = 0.92

NRC = 0.95

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APPENDIX A: Extended Frequency Range Data

Specimen: Crease tiles, mixed configuration (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	13.12	0.21
40	22.67	0.35
50	22.75	0.36
63	53.28	0.83
80	41.03	0.64
100	63.67	0.99
125	77.03	1.20
160	50.91	0.80
200	61.75	0.96
250	60.59	0.95
315	51.52	0.80
400	49.64	0.78
500	55.64	0.87
630	60.70	0.95
800	60.25	0.94
1000	61.70	0.96
1250	62.20	0.97
1600	61.41	0.96
2000	62.17	0.97
2500	62.72	0.98
3150	62.90	0.98
4000	63.43	0.99
5000	63.06	0.99
6300	64.46	1.01
8000	63.97	1.00
10000	64.47	1.01
12500	66.86	1.04

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APPENDIX B: Instruments of Traceability

Specimen: Crease tiles, mixed configuration (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-4/2	3160- 106968	2018-08-09	2019-08-09
Bruel & Kjaer Mic And Preamp C	Type 4943-B-001	2311439	2018-03-27	2019-03-27
Bruel & Kjaer Pistonphone	Type 4228	2781248	2018-08-06	2019-08-06
Omega Digital Temp., Humid. And Pressure Recorder	OM-CP- PRHTemp2000	P97844	2018-02-03	2019-02-03

END