

Test Report

SPONSOR: **Catalyst Acoustics Group**
Agawam, MA

Sound Absorption
RAL™-A20-361

CONDUCTED: 2020-08-31

Page 1 of 8

ON: PET 9mm Panel (Type F-100 mounting)

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 C423-17: "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 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 PET 9mm Panel (Type F-100 mounting). 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

Trade Name: PET straight Panel (8' x 9' area)
Material: Polyethylene terephthalate felt
Thickness: 9 mm (0.354 in.)
Manufacturer: Frasch

SPECIMEN MEASUREMENTS & TEST CONDITIONS

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

Test Specimen

Material: Semirigid felt paneling
Dimensions: 2 @ 1219.2 mm (48 in.) x 2438.4 mm (96 in.)
1 @ 304.8 mm (12 in.) x 2438.4 mm (96 in.)
Thickness: 9.37 mm (0.369 in.)
Overall Weight: 8.39 kg (18.5 lbs)
Density: 133.85 kg/m³ (8.36 lbs/ft³)
Joints: Edges butted

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Catalyst Acoustics Group
2020-08-31

RAL™-A20-361

Page 2 of 8

Overall Specimen Properties

Size: 2.74 m (108.0 in) wide by 2.44 m (96.0 in) long
Thickness: 0.01 m (0.369 in)
Weight: 8.39 kg (18.5 lbs)
Mass per Unit Area: 1.25 kg/m² (0.26 lbs/ft²)
Calculation Area: 6.689 m² (72. ft²)

Test Environment

Room Volume: 291.98 m³
Temperature: 22.9 °C ± 0.0 °C (Requirement: ≥ 10 °C and ≤ 5 °C change)
Relative Humidity: 57.5 % ± 0.0 % (Requirement: ≥ 40 % and ≤ 5 % change)
Barometric Pressure: 98.1 kPa (Requirement not defined)

MOUNTING METHOD

Type F-100 Mounting: The test specimen was laid across a regularly-spaced array of 101.6 mm (4 in.) thick wooden spacers, creating an air space between the test specimen and the horizontal test surface. The numeral suffix in the mounting designation is defined in ASTM E795-16 as the thickness of the spacers in millimeters, rounded to the nearest integer multiple of 5. Perimeter edges were sealed with metal framing, wood, and duct tape.

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Catalyst Acoustics Group
2020-08-31

RAL™-A20-361

Page 3 of 8

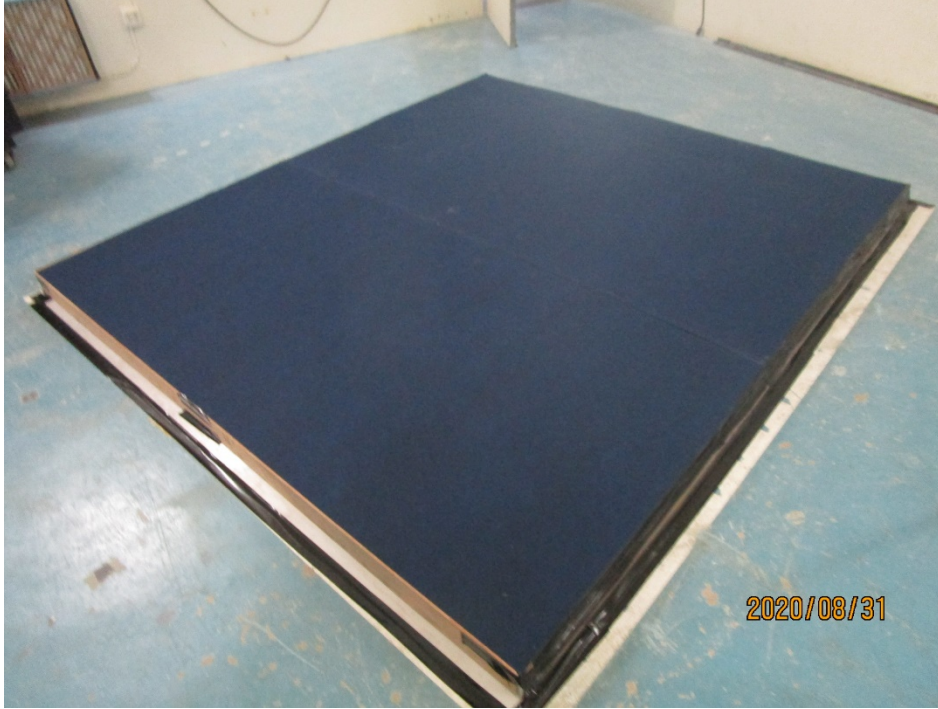


Figure 1 – Specimen mounted in test chamber



Figure 2 – Specimen partially installed, spacer array

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Test Report

Catalyst Acoustics Group
2020-08-31

RAL™-A20-361

Page 4 of 8

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	1.30	13.95	0.19
** 125	0.95	10.18	0.14
160	1.15	12.35	0.17
200	1.88	20.22	0.28
** 250	2.12	22.81	0.32
315	3.19	34.35	0.48
400	3.63	39.07	0.54
** 500	4.87	52.37	0.73
630	5.55	59.73	0.83
800	6.06	65.27	0.91
** 1000	6.12	65.92	0.92
1250	5.60	60.33	0.84
1600	4.61	49.57	0.69
** 2000	4.82	51.84	0.72
2500	5.74	61.83	0.86
3150	5.84	62.89	0.87
** 4000	5.89	63.36	0.88
5000	6.02	64.77	0.90

SAA = 0.68

NRC = 0.65

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2020-08-31

RAL™-A20-361

Page 5 of 8

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

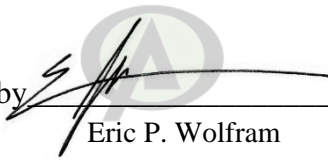
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Acoustical Test Engineer

Approved by


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NVLAP LAB CODE 100227-0

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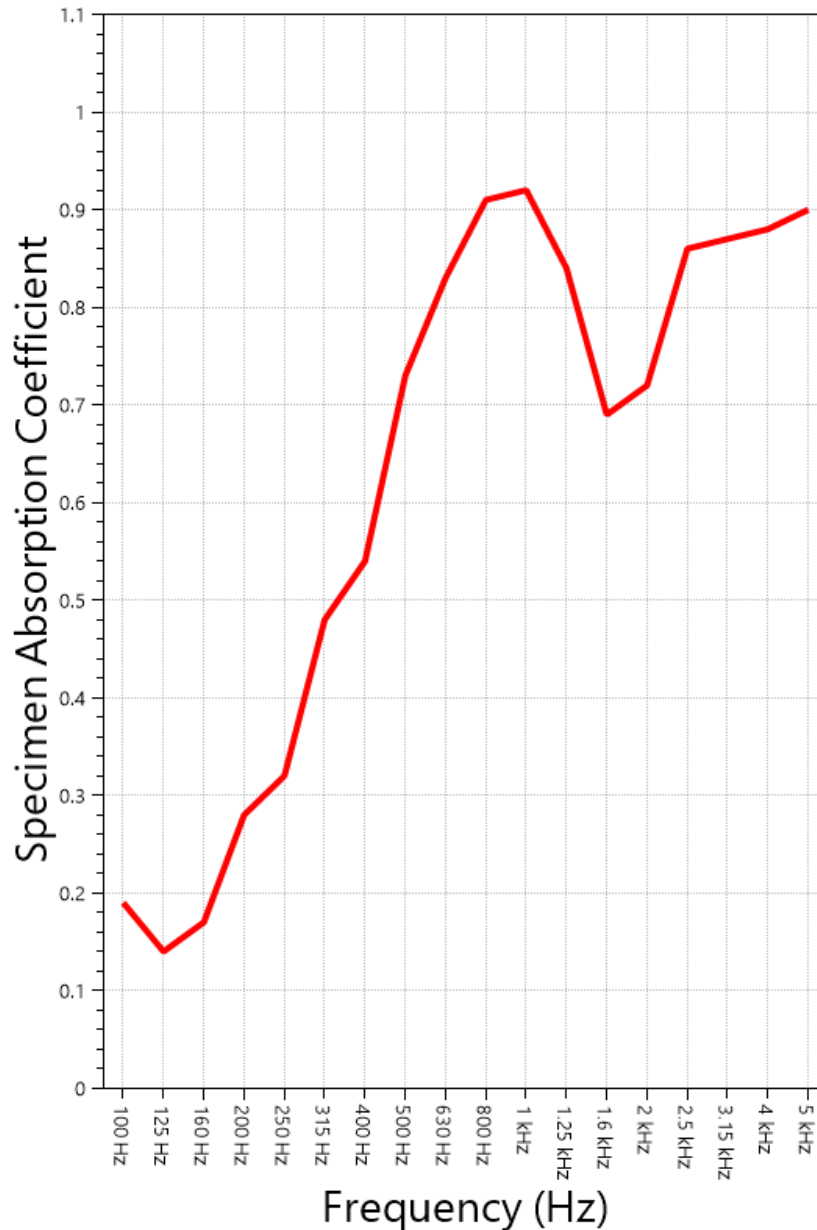
Test Report

Catalyst Acoustics Group
2020-08-31

RAL™-A20-361

Page 6 of 8

SOUND ABSORPTION REPORT PET 9mm Panel (Type F-100 mounting)



SAA = 0.68

NRC = 0.65

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2020-08-31

RAL™-A20-361

Page 7 of 8

APPENDIX A: Extended Frequency Range Data

Specimen: PET 9mm Panel (Type F-100 mounting) (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	2.72	0.04
40	6.63	0.09
50	7.91	0.11
63	-0.19	0.00
80	8.44	0.12
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100	13.95	0.19
125	10.18	0.14
160	12.35	0.17
200	20.22	0.28
250	22.81	0.32
315	34.35	0.48
400	39.07	0.54
500	52.37	0.73
630	59.73	0.83
800	65.27	0.91
1000	65.92	0.92
1250	60.33	0.84
1600	49.57	0.69
2000	51.84	0.72
2500	61.83	0.86
3150	62.89	0.87
4000	63.36	0.88
5000	64.77	0.90
<hr/>		
6300	66.86	0.93
8000	72.09	1.00
10000	71.33	0.99
12500	81.09	1.13

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Catalyst Acoustics Group
2020-08-31

RAL™-A20-361

Page 8 of 8

APPENDIX B: Instruments of Traceability

Specimen: PET 9mm Panel (Type F-100 mounting) (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	2020-06-26	2021-06-26
Bruel & Kjaer Mic And Preamp A	Type 4943-B-001	2311428	2019-09-27	2020-09-27
Bruel & Kjaer Sound Level Calibrator	Type 4230	861609	2019-11-19	2020-11-19
Omega Digital Temp., Humid. And Pressure Recorder	OM-CP- PRHTemp2000	P97844	2020-02-18	2021-02-18

APPENDIX C: Revisions to Original Test Report

Specimen: PET 9mm Panel (Type F-100 mounting) (See Full Report)

<u>Date</u>	<u>Revision</u>
2020-09-03	Original report issued

END