

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

An  ALION Technical Center

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WALLACE CLEMENT SABINE

Test Report

FOR: **Signet Mills**
Spartanburg, SC

Sound Absorption
RAL™-A18-286

CONDUCTED: 2018-09-14

Page 1 of 9

ON: R_3 76444 11311-10A EFP61W Fabric over 2 in. fiberglass insulation

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 R_3 76444 11311-10A EFP61W Fabric over 2 in. fiberglass insulation. A full internal inspection performed on the test specimen by Riverbank personnel verified the manufacturer's description.

Insulation

Material: Rigid fiberglass insulation board
Dimensions: 8 @ 1219.2 mm (48 in.) x 609.6 mm (24 in.)
2 @ 1219.2 mm (48 in.) x 304.8 mm (12 in.)
Thickness: 50.8 mm (2.0 in.)
Overall Weight: 32.55 kg (71.75 lbs)
Density: 95.78 kg/m³ (5.98 lbs/ft³)

Fabric

Designation: R_3 76444 11311-10A EFP61W
Material: Knit textile
Dimensions: 1 @ 2743.2 mm (108 in.) x 946.15 mm (37.25 in.)
1 @ 2743.2 mm (108 in.) x 1498.6 mm (59 in.)
Thickness: 0.88 mm (0.0345 in.)
Overall Weight: 2.15 kg (4.75 lbs)
Mass per Unit Area: 0.32 kg/m² (0.066 lbs/ft²)
Installation: Loose laid over insulation

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Test Report

Signet Mills
2018-09-14

RAL™-A18-286

Page 2 of 9

Physical Measures

Size: 2.44 m (96.0 in) wide by 2.74 m (108.0 in) long
Thickness: 0.05 m (2.034 in)
Weight: 34.7 kg (76.5 lbs)
Mass per Unit Area: 5.19 kg/m² (1.06 lbs/ft²)
Area: 6.69 m² (72 ft²)

Test Environment

Volume: 291.98 m³ (10311 ft³)
Temperature: 20.4 °C ± 0.0 °C (Requirement: ≥10° C and ≤5° C change)
Humidity: 71.2 % ± 0.0 % (Requirement: ≥40% RH and ≤5% change)
Barometric Pressure: 99.3 kPa (Requirement not defined)

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Test Report

Signet Mills
2018-09-14

RAL™-A18-286
Page 3 of 9



Figure 1 – Specimen mounted in test chamber

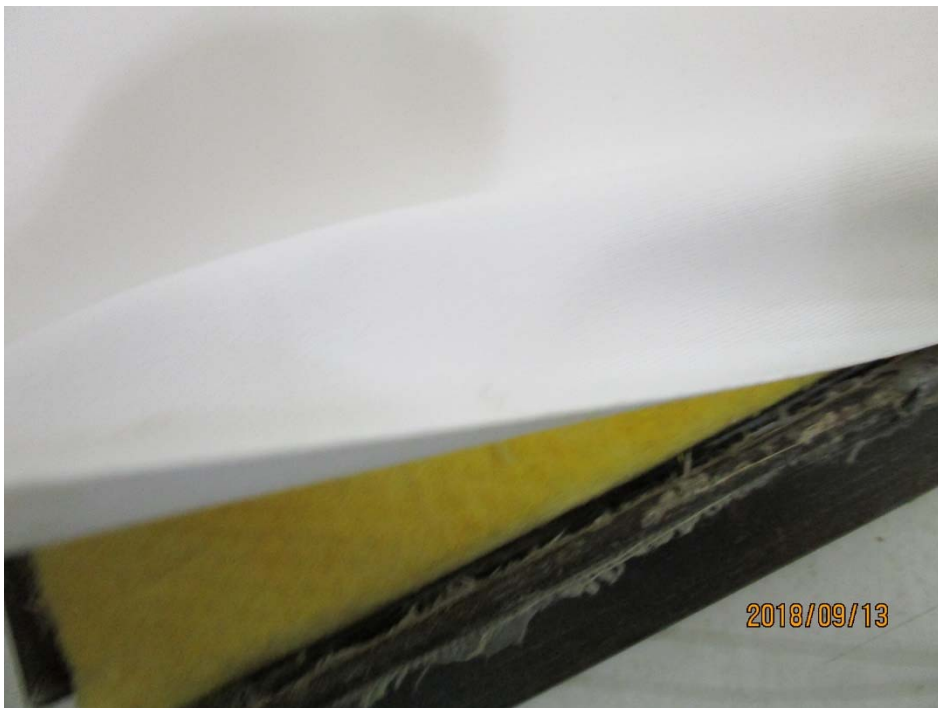


Figure 2 – Detail of fabric material

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Test Report

Signet Mills
2018-09-14

RAL™-A18-286
Page 4 of 9

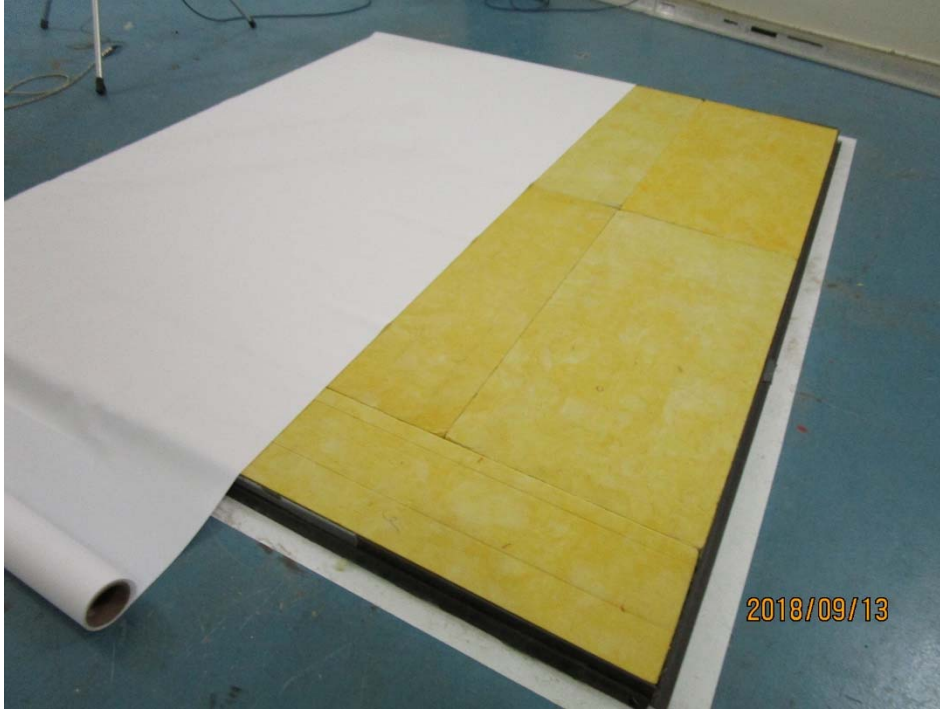


Figure 3 – Fabric partially installed over insulation

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Test Report

Signet Mills
 2018-09-14

RAL™-A18-286

Page 5 of 9

MOUNTING METHOD

Type A Mounting: The test specimen was laid directly against the test surface. 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	1.44	15.51	0.22
** 125	3.28	35.28	0.49
160	3.87	41.68	0.58
200	5.07	54.54	0.76
** 250	5.35	57.53	0.80
315	7.29	78.43	1.09
400	7.48	80.56	1.12
** 500	7.7	82.83	1.15
630	7.71	82.97	1.15
800	7.56	81.39	1.13
** 1000	7.43	80.00	1.11
1250	7.10	76.42	1.06
1600	6.97	75.06	1.04
** 2000	6.79	73.12	1.02
2500	6.87	73.91	1.03
3150	6.90	74.24	1.03
** 4000	7.13	76.72	1.07
5000	7.28	78.35	1.09

SAA = 1.04

NRC = 1.00

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Test Report

Signet Mills

2018-09-14

RAL™-A18-286

Page 6 of 9

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



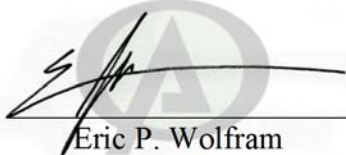
Marc Sciaky
Experimentalist

Report by



Malcolm Kelly
Acoustician

Approved by



Eric P. Wolfram
Laboratory Manager

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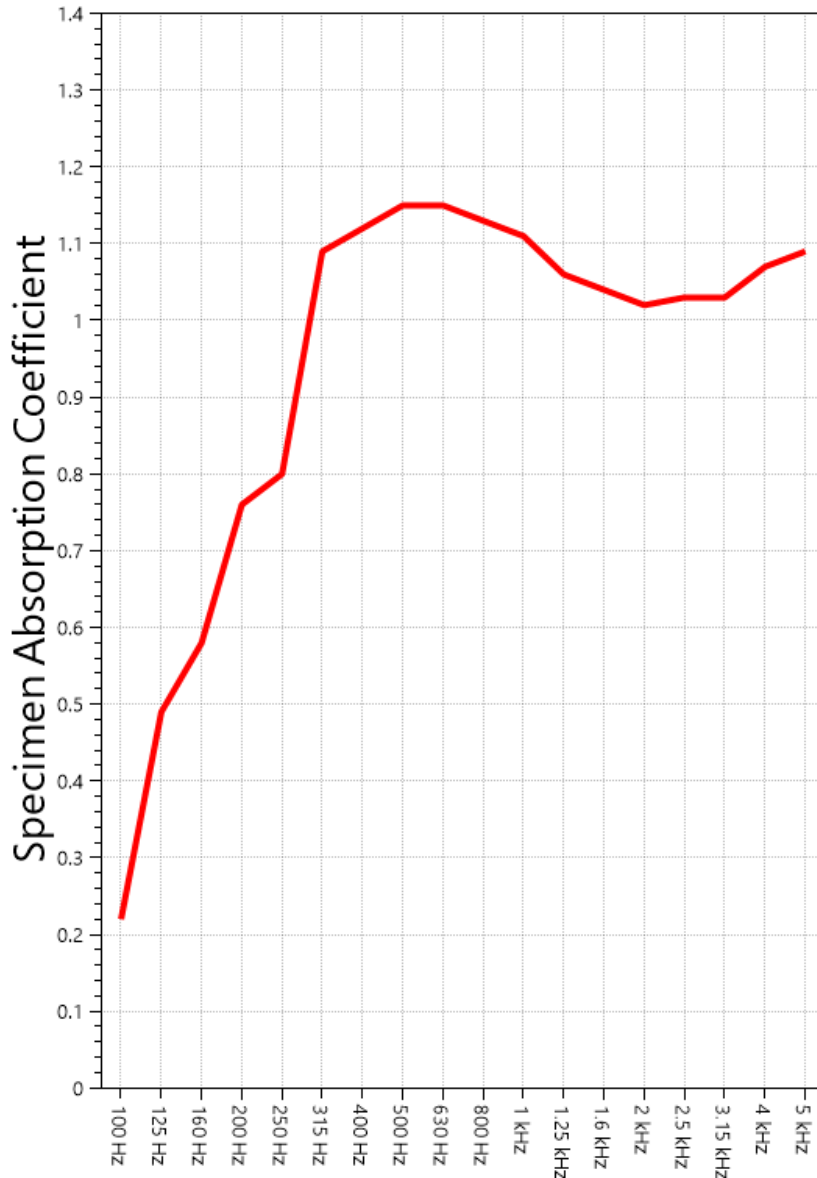
RAL™-A18-286

Page 7 of 9

Signet Mills
2018-09-14

SOUND ABSORPTION REPORT

R_3 76444 | I311-10A EFP61W Fabric over 2 in. fiberglass insulation



Frequency (Hz)

SAA = 1.04

NRC = 1.00



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Test Report

Signet Mills
 2018-09-14

RAL™-A18-286

Page 8 of 9

APPENDIX A: Extended Frequency Range Data

Specimen: R_3 76444 11311-10A EFP61W Fabric over 2 in. fiberglass insulation (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	9.21	0.13
40	0.39	0.01
50	0.69	0.01
63	0.86	0.01
80	-3.50	-0.05
100	15.51	0.22
125	35.28	0.49
160	41.68	0.58
200	54.54	0.76
250	57.53	0.80
315	78.43	1.09
400	80.56	1.12
500	82.83	1.15
630	82.97	1.15
800	81.39	1.13
1000	80.00	1.11
1250	76.42	1.06
1600	75.06	1.04
2000	73.12	1.02
2500	73.91	1.03
3150	74.24	1.03
4000	76.72	1.07
5000	78.35	1.09
6300	80.46	1.12
8000	82.36	1.14
10000	85.00	1.18
12500	95.42	1.33



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Signet Mills
2018-09-14

RAL™-A18-286

Page 9 of 9

APPENDIX B: Instruments of Traceability

Specimen: R_3 76444 11311-10A EFP61W Fabric over 2 in. fiberglass insulation (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 A	Type 4943-B-001	2311428	2017-09-22	2018-09-22
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

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