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GENEVA, IL 60134
630-232-0104

An  ALION Technical Center

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WALLACE CLEMENT SABINE

Test Report

FOR: **Polyfill LLC**
Sidney, OH

Sound Transmission Loss
RAL-TL18-346

CONDUCTED: 2018-05-30

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ON: 0.5# EVA with calcium carbonate filler

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 E90-09 (2016): "Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements." The single number rating of the specimen was calculated according to ASTM E413-16: "Classification for Rating Sound Insulation." A description of the measuring procedure and room qualifications is available upon request. The transmission loss values are for a single direction of measurement. The product designation used in this report was provided to RAL by the sponsor and attributed to the specimen under test.

DESCRIPTION OF THE SPECIMEN

The test specimen was designated by the manufacturer as 0.5# EVA with calcium carbonate filler. A full external visual inspection performed on the test specimen by Riverbank personnel verified the manufacturer's description.

Test Specimen

Material:	Ethylene-vinyl acetate with calcium carbonate filler
Dimensions:	1219.2 mm (48 in.) x 2413 mm (95 in.)
Thickness:	1.55 mm (0.061 in.)
Overall Weight:	7.71 kg (17 lbs)
Mass per Unit Area:	Nominal @ 2.44 kg/m ² (0.5 lb/ft ²) Measured @ 2.62 kg/m ² (0.54 lb/ft ²)

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Physical Measures

Overall Dimensions: 1.22 m (48.00 in.) wide by 2.41 m (95.00 in.) high
Overall Thickness: 1.55 mm (0.06 in.)
Overall Weight: 7.71 kg (17.00 lbs.)
Transmission Area: 2.93 m² (31.50 ft²)
Mass per Unit Area: 2.62 kg/m² (0.54 lbs./ft²)

Test Aperture

Size: 1.22 m (4.0 ft.) by 2.44 m (8.0 ft.)
Filler Wall: None
Sealed: Entire periphery (both sides) with dense mastic

Test Environment

Source Room

Volume: 178.3 m³ (6297.6 ft³)
Temperature: 23±0°C (73±1°F)
Humidity: 55±2%

Receive Room

Volume: 130.5 m³ (4607.0 ft³)
Temperature: 23±0°C (73±1°F)
Humidity: 55±1%

Requirements

Temperature: 22° C +/- 2° C, not more than 3° C change over all tests.
Humidity: ≥ 30% RH, not more than +/- 3% change over all tests.



NVLAP LAB CODE 100227-0

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Figure 1 – Specimen mounted in test opening, as viewed from receive room



Figure 2 – Specimen as received, prior to installation

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TEST RESULTS

Sound transmission loss values are tabulated at the eighteen standard frequencies. A graphic presentation of the data and additional information appear on the following pages. The precision of the transmission loss test data is within the limits set by the ASTM Standard E90-09 (2016).

<u>FREQ.</u>	<u>T.L.</u>	<u>C.L.</u>	<u>DEF.</u>	<u>FREQ.</u>	<u>T.L.</u>	<u>C.L.</u>	<u>DEF.</u>
100	13	0.71		800	20	0.16	3
125	11	0.61		1000	21	0.14	3
160	10	0.59		1250	23	0.12	2
200	11	0.45		1600	25	0.12	
250	12	0.44	2	2000	26	0.11	
315	14	0.38	3	2500	28	0.09	
400	15	0.34	5	3150	29	0.09	
500	16	0.19	5	4000	30	0.07	
630	18	0.20	4	5000	33	0.06	

STC=21

ABBREVIATION INDEX

FREQ. = FREQUENCY, HERTZ, (cps)

T.L. = TRANSMISSION LOSS, dB

C.L. = SAMPLING PRECISION DURING TEST IN dB, FOR A 95% CONFIDENCE LIMIT

DEF. = DEFICIENCIES, dB<STC CONTOUR (SUM OF DEF = 27)

STC = SOUND TRANSMISSION CLASS

Tested by



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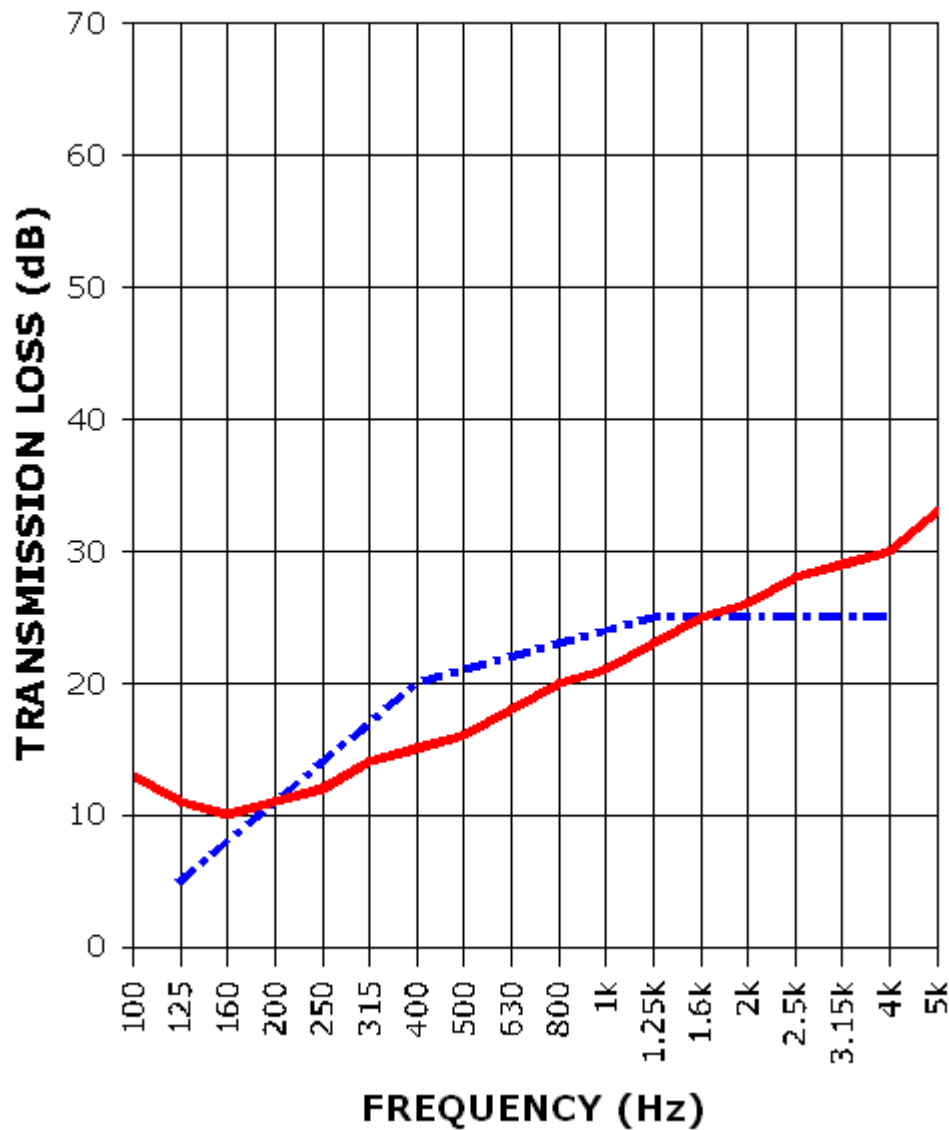
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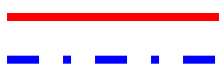
SOUND TRANSMISSION REPORT

0.5# EVA with calcium carbonate filler



STC=21

OITC=16



TRANSMISSION LOSS

SOUND TRANSMISSION LOSS CONTOUR

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APPENDIX A: Extended Frequency Range Data

Specimen: 0.5# EVA with calcium carbonate filler (See Full Report)

The following non-accredited data were obtained in accordance with ASTM E90-09 (2016), 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. Sampling precision observed during this procedure is reported below.

1/3 Octave Band Center Frequency (Hz)	Sound Transmission Loss (dB)	Sampling Precision (95% ±)
31.5	7	1.13
40	10	0.86
50	9	0.99
63	3	0.82
80	6	1.01
100	13	0.71
125	11	0.61
160	10	0.59
200	11	0.45
250	12	0.44
315	14	0.38
400	15	0.34
500	16	0.19
630	18	0.20
800	20	0.16
1000	21	0.14
1250	23	0.12
1600	25	0.12
2000	26	0.11
2500	28	0.09
3150	29	0.09
4000	30	0.07
5000	33	0.06
6300	34	0.05
8000	35	0.10
10000	36	0.14
12500	38	0.17



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APPENDIX B: Determination of Outdoor Indoor Transmission Class (OITC)

Specimen: 0.5# EVA with calcium carbonate filler (See Full Report)

The determination of the Outdoor Indoor Transmission Class (OITC) as reported below was made with explicit conformity to the procedures described in the ASTM E1332-16 test standard. Test Method ASTM E90-09 (2016) was used to obtain the sound transmission loss data. This rating is based on an average transportation noise source spectrum and an A-weighted sound level reduction, either of which may be inappropriate for some applications.

One-third Octave Band Center Frequency, Hz	Reference Sound Spectrum, dB	Test Specimen Transmission Loss, dB
80	103	6
100	102	13
125	101	11
160	98	10
200	97	11
250	95	12
315	94	14
400	93	15
500	93	16
630	91	18
800	90	20
1000	89	21
1250	89	23
1600	88	25
2000	88	26
2500	87	28
3150	85	29
4000	84	30

OITC = 16



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APPENDIX C: Instruments of Traceability

Specimen: 0.5# EVA with calcium carbonate filler (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 - System4	Type 3560-C	2639093	2017-08-02	2018-08-02
Bruel & Kjaer Mic And Preamp D	Type 4943-B-001	2311440	2017-09-22	2018-09-22
Bruel & Kjaer Pistonphone	Type 4228	2781248	2017-08-02	2018-08-02
EXTECH_62	SD700	A.083662	2017-11-20	2018-11-20
EXTECH_63	SD700	A.083663	2017-11-20	2018-11-20

END



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