

1512 S BATAVIA AVENUE  
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-TL18-349**

CONDUCTED: 2018-05-30

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ON: 1.5# 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 1.5# 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 2428.88 mm (95.625 in.)
Thickness:	4.6 mm (0.181 in.)
Overall Weight:	21.09 kg (46.5 lbs)
Mass per Unit Area:	Nominal @ 7.32 kg/m <sup>2</sup> (1.5 lb/ft <sup>2</sup> ) Measured @ 7.12 kg/m <sup>2</sup> (1.46 lb/ft <sup>2</sup> )

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### Physical Measures

Overall Dimensions: 1.22 m (48.00 in.) wide by 2.43 m (95.63 in.) high  
Overall Thickness: 4.60 mm (0.18 in.)  
Overall Weight: 21.09 kg (46.50 lbs.)  
Transmission Area: 2.97 m<sup>2</sup> (32.00 ft<sup>2</sup>)  
Mass per Unit Area: 7.13 kg/m<sup>2</sup> (1.46 lbs./ft<sup>2</sup>)

### 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 m<sup>3</sup> (6297.6 ft<sup>3</sup>)  
Temperature: 23±0°C (73±1°F)  
Humidity: 51±0%

#### Receive Room

Volume: 130.5 m<sup>3</sup> (4607.0 ft<sup>3</sup>)  
Temperature: 23±0°C (73±1°F)  
Humidity: 53±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.

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



Figure 2 – Detail of test 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	21	0.66		800	29	0.18	3
125	17	0.55		1000	30	0.14	3
160	17	0.52		1250	32	0.13	2
200	19	0.50	1	1600	34	0.12	
250	20	0.41	3	2000	35	0.09	
315	22	0.31	4	2500	37	0.13	
400	23	0.40	6	3150	39	0.13	
500	25	0.24	5	4000	40	0.12	
630	27	0.24	4	5000	42	0.12	

STC=30

### 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 = 31)

STC = SOUND TRANSMISSION CLASS

Tested by



Dean Victor  
Senior Experimentalist

Report by



Malcolm Kelly  
Acoustician

Approved by



Eric P. Wolfram  
Laboratory Manager



NVLAP LAB CODE 100227-0

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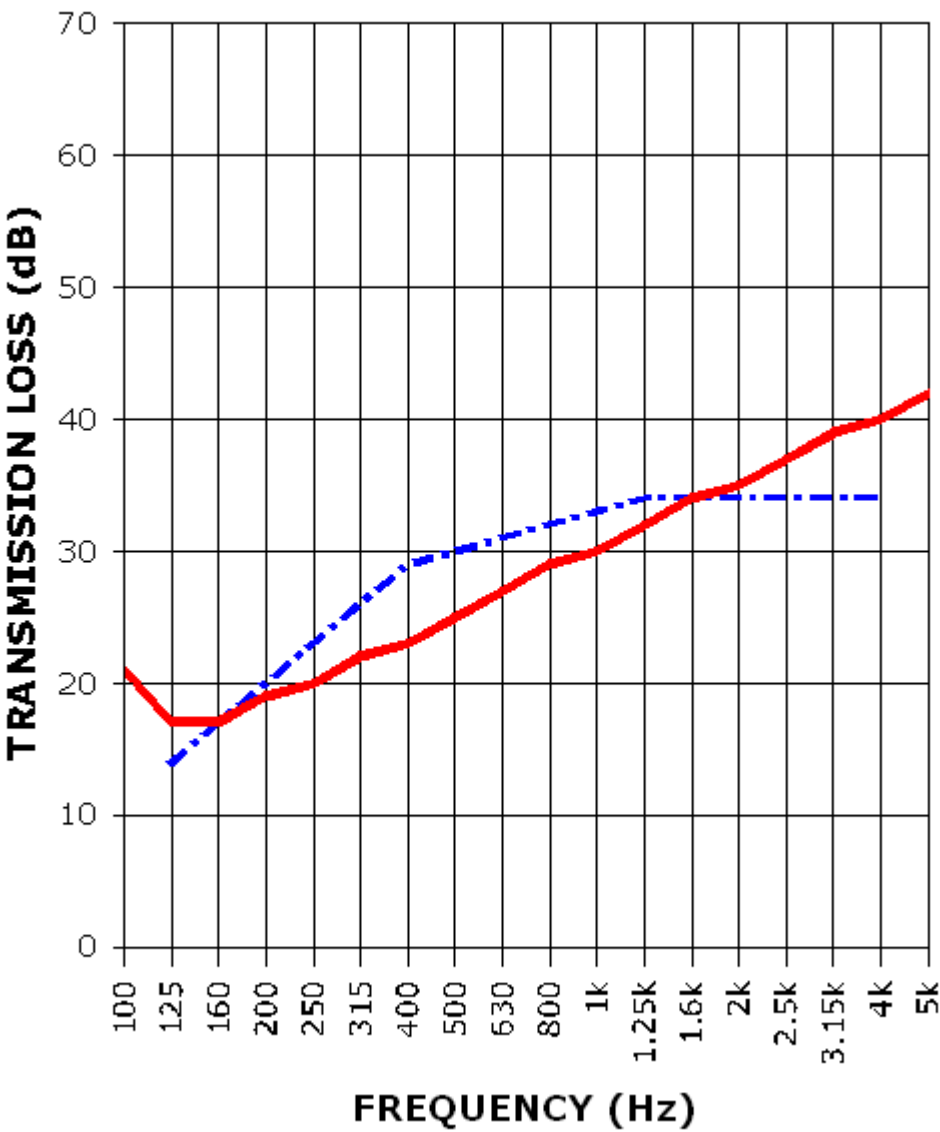
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SOUND TRANSMISSION REPORT  
1.5# EVA with calcium carbonate filler



STC=30

OITC=24

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- - -

TRANSMISSION LOSS  
SOUND TRANSMISSION LOSS CONTOUR

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### **APPENDIX A: Extended Frequency Range Data**

Specimen: 1.5# 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	13	1.28
40	16	0.98
50	14	1.44
63	9	1.34
80	12	0.96
100	21	0.66
125	17	0.55
160	17	0.52
200	19	0.50
250	20	0.41
315	22	0.31
400	23	0.40
500	25	0.24
630	27	0.24
800	29	0.18
1000	30	0.14
1250	32	0.13
1600	34	0.12
2000	35	0.09
2500	37	0.13
3150	39	0.13
4000	40	0.12
5000	42	0.12
6300	43	0.11
8000	45	0.17
10000	46	0.21
12500	71	25.30



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

Specimen: 1.5# 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	12
100	102	21
125	101	17
160	98	17
200	97	19
250	95	20
315	94	22
400	93	23
500	93	25
630	91	27
800	90	29
1000	89	30
1250	89	32
1600	88	34
2000	88	35
2500	87	37
3150	85	39
4000	84	40

***OITC = 24***



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### **APPENDIX C: Instruments of Traceability**

Specimen: 1.5# EVA with calcium carbonate filler (See Full Report)

<b><u>Description</u></b>	<b><u>Model</u></b>	<b><u>Serial Number</u></b>	<b><u>Date of Certification</u></b>	<b><u>Calibration Due</u></b>
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

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