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

An ALION Technical Center

Test Report

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FOUNDED 1918 BY
WALLACE CLEMENT SABINE

FOR: **Polyfill LLC**
Sidney, OH

Sound Transmission Loss
RAL-TL18-347

CONDUCTED: 2018-05-30

ON: 0.75# 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 0.75# 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:	2.16 mm (0.085 in.)
Overall Weight:	10.89 kg (24 lbs)
Mass per Unit Area:	Nominal @ 3.66 kg/m^2 (0.75 lb/ft^2)
	Measured @ 3.70 kg/m^2 (0.76 lb/ft^2)

Physical Measures

Overall Dimensions:	1.22 m (48.00 in.) wide by 2.41 m (95.00 in.) high
Overall Thickness:	2.16 mm (0.09 in.)
Overall Weight:	10.89 kg (24.00 lbs.)
Transmission Area:	2.93 m^2 (31.50 ft^2)
Mass per Unit Area:	3.71 kg/m^2 (0.76 $lbs./ft^2$)

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^3 (6297.6 ft^3)
Temperature:	23±0ºC (73±1ºF)
Humidity:	57±1%

Receive Room

Volume:	130.5 m^3 (4607.0 ft^3)
Temperature:	23±0ºC (73±1ºF)
Humidity:	56±1%

Requirements

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

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).

FREQ.	T.L.	C.L.	DEF.	FREQ.	T.L.	C.L.	DEF.
100	16	0.43		800	22	0.19	4
125	14	0.68		1000	24	0.17	3
160	13	0.36		1250	26	0.16	2
200	13	0.48	1	1600	28	0.12	
250	15	0.42	2	2000	29	0.11	
315	17	0.38	3	2500	31	0.07	
400	17	0.32	6	3150	32	0.07	
500	19	0.26	5	4000	34	0.08	
630	21	0.17	4	5000	36	0.10	

STC=24

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 = 30)
STC = SOUND TRANSMISSION CLASS

Tested by _____
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NVLAP TESTING
NVLAP LAB CODE 100227-0

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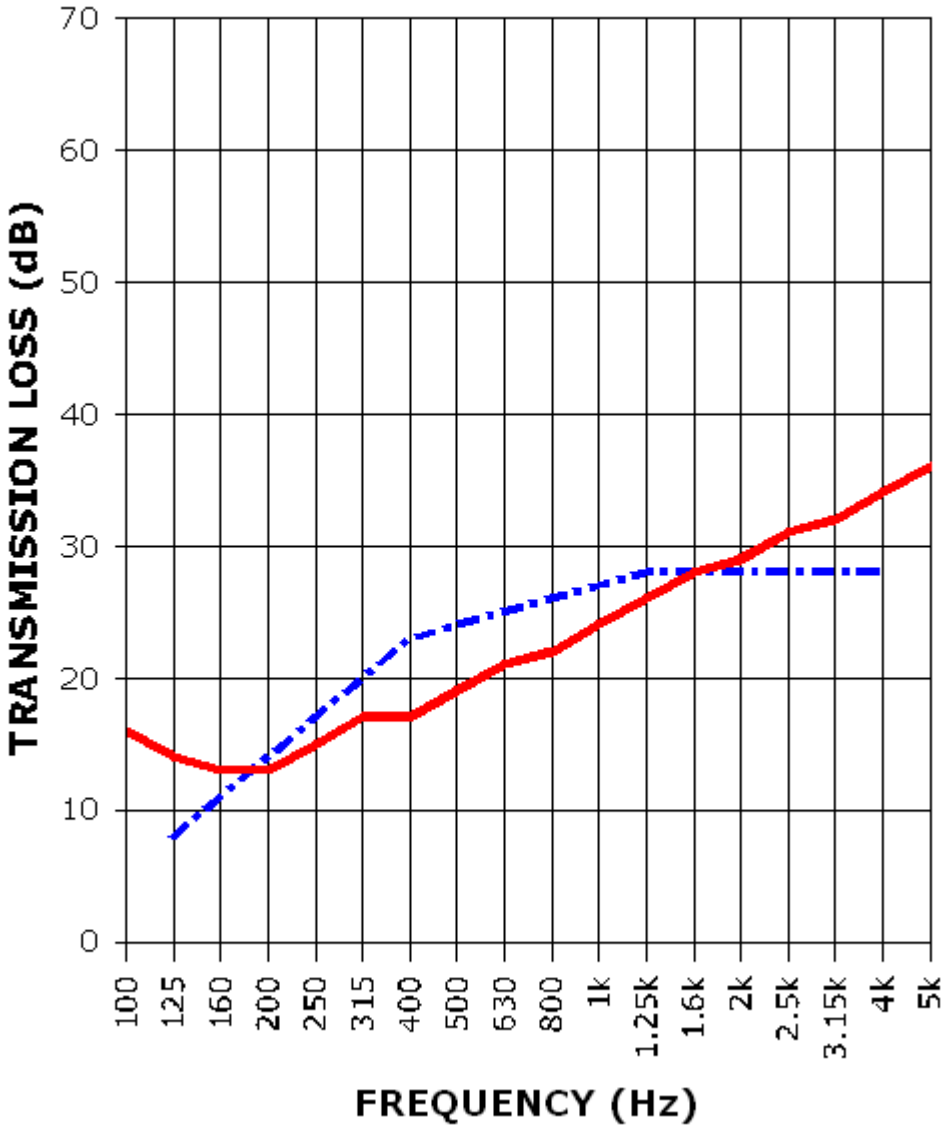
SOUND TRANSMISSION REPORT

0.75# EVA with calcium carbonate filler



STC=24
OITC=19

TRANSMISSION LOSS
SOUND TRANSMISSION LOSS CONTOUR

APPENDIX A: Extended Frequency Range Data

Specimen: 0.75# 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	8	0.75
40	12	0.85
50	11	0.57
63	5	0.73
80	7	0.75
100	16	0.43
125	14	0.68
160	13	0.36
200	13	0.48
250	15	0.42
315	17	0.38
400	17	0.32
500	19	0.26
630	21	0.17
800	22	0.19
1000	24	0.17
1250	26	0.16
1600	28	0.12
2000	29	0.11
2500	31	0.07
3150	32	0.07
4000	34	0.08
5000	36	0.10
6300	37	0.13
8000	38	0.12
10000	39	0.15
12500	40	0.23

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

Specimen: 0.75# 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	7
100	102	16
125	101	14
160	98	13
200	97	13
250	95	15
315	94	17
400	93	17
500	93	19
630	91	21
800	90	22
1000	89	24
1250	89	26
1600	88	28
2000	88	29
2500	87	31
3150	85	32
4000	84	34

*OITC = **19***

APPENDIX C: Instruments of Traceability

Specimen: 0.75# EVA with calcium carbonate filler (See Full Report)

Description	Model	Serial Number	Date of Certification	Calibration Due
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