

# RIVERBANK ACOUSTICAL LABORATORIES

1512 S. BATAVIA AVENUE  
GENEVA, ILLINOIS 60134

Alion Science and Technology

630/232-0104  
FOUNDED 1918 BY  
WALLACE CLEMENT SABINE

## TEST REPORT

FOR: **Spirit Acoustics Inc.**  
South Plainfield, NJ.

**Sound Transmission Loss**  
**RAL™-TL14-388**

CONDUCTED: 2014-10-28

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ON: Speech Guard with Barrier Septum - 3PCF Black with 1.4oz W/R Black Facing Top and .9oz Black Facing Back Side with a 1 PSF Barrier Septum

### TEST METHOD

Unless otherwise designated, the measurements reported below were made with all facilities and procedures in explicit conformity with the ASTM Designations E90-09 and E413-10, as well as other pertinent standards. Riverbank Acoustical Laboratories has been accredited by the U.S. Department of Commerce, National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP) for this test procedure (NVLAP Lab Code: 100227-0). A description of the measuring technique is available separately.

### DESCRIPTION OF THE SPECIMEN

The manufacturer's description of the specimen was as follows: Speech Guard with Barrier Septum - 3PCF Black with 1.4oz W/R Black Facing Top and .9oz Black Facing Back Side with a 1 PSF Barrier Septum. A visual inspection by riverbank staff verified the manufacturer's description of the specimen. The specimen consisted of the following material: 0.25 mm (0.01 in.) textile facing; 8.89 mm (0.35 in.) semi-rigid fiberglass; 4.06 mm (0.16 in.) mass-loaded vinyl barrier; 8.89 mm (0.35 in.) semi-rigid fiberglass; 0.25 mm (0.01 in.) textile facing.

The overall dimensions of the specimen as measured were 1.16m (45.50 in.) wide by 2.44 m (96.00 in.) high and 22.34 mm (0.87 in.) thick. The measured weight of the entire specimen was 17.0 kg (37.5 lbs.), an average of 6.0 kg/m<sup>2</sup> (1.2 lbs/ft<sup>2</sup>). The specimen was tested in the laboratory's 1.22 m (4.0 ft.) by 2.44 m (8.0 ft.) test opening and was sealed on the periphery (both sides) with dense mastic.

The source room temperature at the time of the test was 21±0°C (70±1°F) and 51±1% relative humidity. The receiving room temperature at the time of the test was 21±0°C (69±0°F) and 52±1% relative humidity. The source and receive reverberation room volumes were 178 m<sup>3</sup> (6,298 ft<sup>3</sup>) and 133 m<sup>3</sup> (4,701 ft<sup>3</sup>), respectively. The transmission area used in the calculations was 2.8 m<sup>2</sup> (30.5 ft<sup>2</sup>).



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Figure 1 - Specimen mounted in the test opening.



Figure 2 - Detail of the test specimen.



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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 TL test data is within the limits set by the ASTM Standard E90-09.

<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	19	0.76		800	24	0.23	4
125	16	0.49		1000	25	0.15	4
160	16	0.75		1250	27	0.13	3
200	17	0.71		1600	31	0.09	
250	17	0.50	2	2000	33	0.10	
315	18	0.37	4	2500	36	0.06	
400	20	0.27	5	3150	38	0.07	
500	21	0.24	5	4000	40	0.05	
630	23	0.25	4	5000	42	0.08	

STC=26

### ABBREVIATION INDEX

FREQ. = FREQUENCY, HERTZ, (cps)

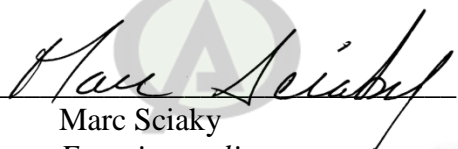
T.L. = TRANSMISSION LOSS, dB

C.L. = UNCERTAINTY IN dB, FOR A 95% CONFIDENCE LIMIT


DEF. = DEFICIENCIES, dB<STC CONTOUR (SUM OF DEF = 31)

STC = SOUND TRANSMISSION CLASS

Tested by

  
Marc Sciaky  
Experimentalist

Report by

  
Chris Nottoli  
Acoustician

Approved by

  
Eric P. Wolfram  
Laboratory Manager



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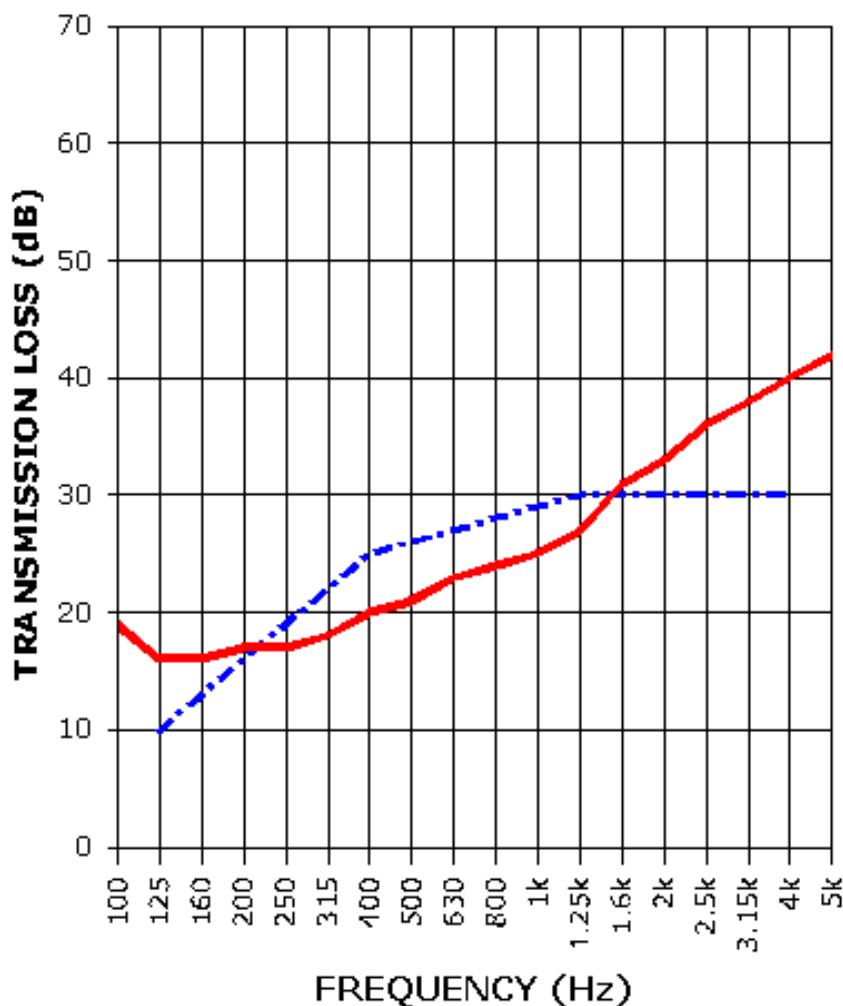
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### SOUND TRANSMISSION REPORT

Speech Guard with Barrier Septum - 3PCF Black with 1.4oz W/R Black Facing  
Top and .9oz Black Facing Back Side with a 1 PSF Barrier Septum



STC=26



TRANSMISSION LOSS  
SOUND TRANSMISSION LOSS CONTOUR



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Appendix to ASTM E90 Sound Transmission Loss Test

### **Extended Frequency Range Data**

Product Description: Speech Guard with Barrier Septum - 3PCF Black with 1.4oz W/R Black Facing Top and .9oz Black Facing Back Side with a 1 PSF Barrier Septum (See Full Report)

As requested by the client, transmission loss (TL) values were calculated at additional test frequencies. Although the measurements were made in accordance with the procedures described in ASTM E90-09, they do not qualify as part of the standard. Since the results are representative of the test environment only, they are unofficial and intended for research and development guidelines rather than for commercial purposes. The transmission loss values at the additional frequencies were as follows:

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1/3 Octave Center Frequency

Sound Transmission Loss

<u>(Hz)</u>	<u>(dB)</u>
40	13
50	11
63	10
80	8
6300	45
8000	49
10000	52

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END



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