WESTERN ELECTRO - ACOUSTIC LABORATORY
A division of Veneklasen Associates, Inc.

TESTING • CALIBRATION • RESEARCH

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SOUND TRANSMISSION LOSS TEST REPORT NO. TL14-214 revision 1

CLIENT: **CEMCO**
263 N Covina Lane
City of Industry, CA 91744
TEST DATE: 29 April 2014

28 May 2014

INTRODUCTION

The test was performed in accordance with ASTM E 90-09, *Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions* and ASTM E2235-04$^{\varepsilon 1}$, *Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods*. Copies of the test standard are available at www.astm.org. The test chamber source and receiving room volumes are 204 and 148.4 cubic meters respectively. Western Electro-Acoustic Laboratory is accredited by the United States Department of Commerce, National Institute of Standards and Technology under the National Voluntary Accreditation Program (NVLAP) Lab Code 100256-0 for this test procedure. This test report relates only to the item(s) tested. This report must not be used to claim product certification, approval, or endorsement by WEAL, NVLAP, NIST or any agency of the federal government.

DESCRIPTION OF TEST SPECIMEN

The test specimen was a wall assembly constructed from metal studs, resilient channel, and Type X gypsum board. The metal studs were 92.1 mm (3-5/8 inch) Cemco 20 mil studs and were spaced at 610 mm (24 inches) O.C. The sill and head tracks were also 92.1 mm (3-5/8 inch) Cemco 20 mil metal. The frame was isolated from the test opening with 6.4 mm (1/4 inch) neoprene pads. Full width R-13 un-faced fiberglass batts, 89 mm (3-1/2 inch) thick, were installed in the stud spaces. On the source room side, two layers of 15.9 mm (5/8 inch) thick Type X gypsum board were screwed to the studs at 203 mm (8 inches) O.C. around the perimeter and 305 mm (12 inches) O.C. in the field using 31.8 mm (1-1/4 inch) drywall screws on the first layer and 50.8 mm (2 inch) drywall screws on the second layer. The gypsum board was oriented vertically. On the receiving room side, Cemco 18 mil modified RC-1 single leg resilient channels were screwed to the studs horizontally at 610 mm (24 inches) O.C. The slots on the channel were 52.4 mm (2-1/16 inches) long separated by 23.8 mm (15/16 inch) of steel. The top four channels were oriented with the resilient leg above the screw leg and the bottom channel was oriented with the resilient leg below the screw leg. The center of the top channel was 3 inches (76.2 mm) below the top of the wall and the center of the bottom channel was 76.2 mm (3 inches) above the bottom of the wall. Two layers of 15.9 mm (5/8 inch) thick Type X gypsum board were screwed to the resilient channel at 305 mm (12 inches) O.C. using 25.4 mm (1 inch) drywall screws on the first layer and 41.3 mm (1-5/8 inch) drywall screws on the second layer. The gypsum board was oriented vertically and the joints were staggered. On both sides, the joints and perimeters were sealed with a bead of caulking and metal foil tape. All screw heads were covered with metal foil tape. The overall dimensions of the wall assembly were 2.44 m (96 inches) wide by 2.44 m (96 inches) high by 168 mm (6-5/8 inches) thick. The overall weight of the assembly was estimated to be 286 kg (632 lbs.) for a calculated surface density of 9.87 kg/m^2 (48.2 lbs./ft^2).

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RESULTS OF THE MEASUREMENTS

One-third octave band sound transmission loss values are plotted and tabulated on the attached sheet. ASTM minimum volume requirements are met at 80 Hz and above. Flagged values are lower limits of transmission loss. Actual transmission loss will be equal to or greater than the flagged value. The energy through the filler wall was within 6 dB of the energy through the composite wall in those frequency bands. The calculated STC rating is accurate because none of the values used to calculate the STC are flagged. The Outdoor-Indoor Transmission Class rating determined in accordance with ASTM E 1332-10a was OITC-44. The Sound Transmission Class rating determined in accordance with ASTM E 413-10 was STC-59.

Respectfully submitted,
Western Electro-Acoustic Laboratory

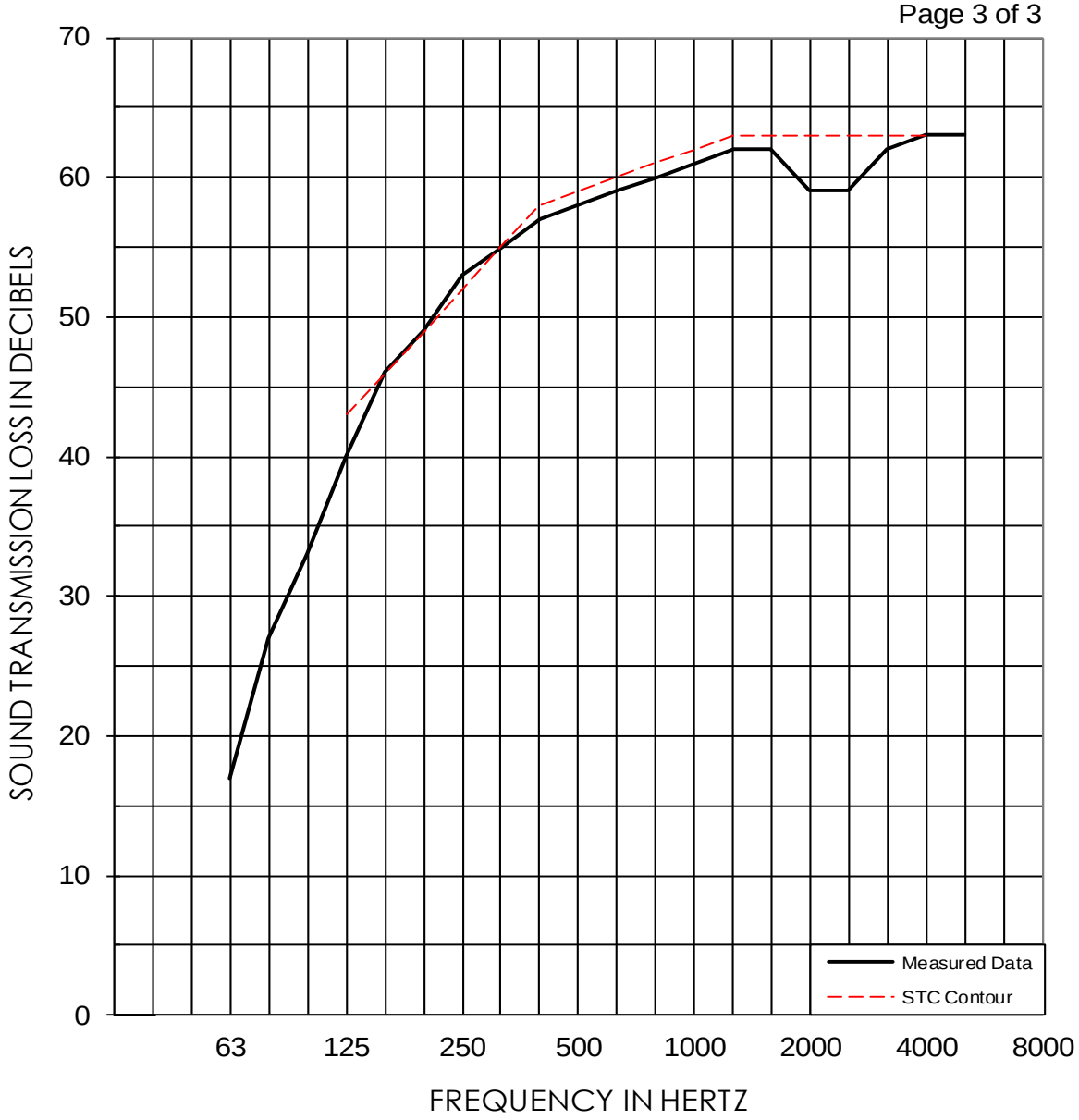
Approved:

Gary E. Mange
Laboratory Director

Raul Martinez
Acoustical Test Technician

WESTERN ELECTRO-ACOUSTIC LABORATORY

Report No. TL14-214



1/3 OCT BAND CNTR FREQ	63	80	100	125	160	200	250	315	400	500
TL in dB	**17**	**27**	**33**	**40**	***46**	***49**	***53**	***55**	***57**	**58**
95% Confidence in dB	1.42	1.92	2.07	1.47	0.89	0.76	0.80	0.52	0.36	0.38
deficiencies				(3)	(0)	(0)		(0)	(1)	(1)
1/3 OCT BAND CNTR FREQ	**630**	**800**	**1000**	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**
TL in dB	**59**	**60**	**61**	**62**	**62**	**59**	**59**	**62**	**63**	**63**
95% Confidence in dB	0.29	0.44	0.38	0.39	0.36	0.56	0.55	0.31	0.32	0.50
deficiencies	(1)	(1)	(1)	(1)	(1)	(4)	(4)	(1)	(0)	

EWR	OITC
61	44

* Minimum estimate of transmission loss. Measurement limited by filler wall. Actual TL will be equal or greater than value reported.

Test Date: 29 April 2014
Specimen Area: 64 sq.ft.
Temperature: 72.7 deg. F
Relative Humidity: 33 %

STC
59
(19)

NVLAP LAB CODE 100256-0