



WESTERN ELECTRO - ACOUSTIC LABORATORY

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SOUND TRANSMISSION LOSS TEST REPORT NO. TL13-181

CLIENT: ClarkDietrich
9100 Centre Pointe Drive, Suite 210
West Chester, OH 45069

22 February 2013

TEST DATE: 20 February 2013

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^{e1}, *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 channels, and Type X gypsum board. The metal studs were 92 mm (3-5/8 inch) ClarkDietrich™ Building Systems ProSTUD 15 mil (25 GA equivalent) and were spaced at 610 mm (24 inches) O.C. The head and sill tracks were 92 mm (3-5/8 inch) ClarkDietrich ProTRAK 15 mil (25 GA equivalent). The frame was isolated from the test opening with 6.4 mm (1/4 inch) neoprene pads. Full width Owens Corning 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 USG Type X gypsum board was 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 28.6 mm (1-1/8 inch) drywall screws on the first layer and 50.8 mm (2 inch) drywall screws on the second layer. On the receiving room side, ClarkDietrich 22 mil RCSD single leg deluxe resilient channels were screwed to the studs horizontally and spaced at 610 mm (24 inches) O.C. The channels were oriented with the resilient leg above the screw leg. The center of the top channel was 76 mm (3 inches) below the top of the wall and the center of the bottom channel was 76 mm (3 inches) above the bottom of the wall. Two layers of 15.9 mm (5/8 inch) thick USG Type X gypsum board was screwed to the channels at 305 mm (12 inches) O.C. with 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. All gypsum board was oriented vertically and the joints were staggered on opposite sides of the wall and between layers. 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 171 mm (6-3/4 inches) thick. The overall weight of the assembly was estimated to be 280 kg (618 lbs) for a calculated surface density of 47.1 kg/m² (9.65 lbs./ft²).

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. The Outdoor-Indoor Transmission Class rating determined in accordance with ASTM E 1332-10a was OITC-46. The Sound Transmission Class rating determined in accordance with ASTM E 413-10 was STC-62.

Approved:

Respectfully submitted,
Western Electro-Acoustic Laboratory

Stephen A. Martin, Ph.D., P.E.
Laboratory Director

Raul Martinez
Acoustical Test Technician

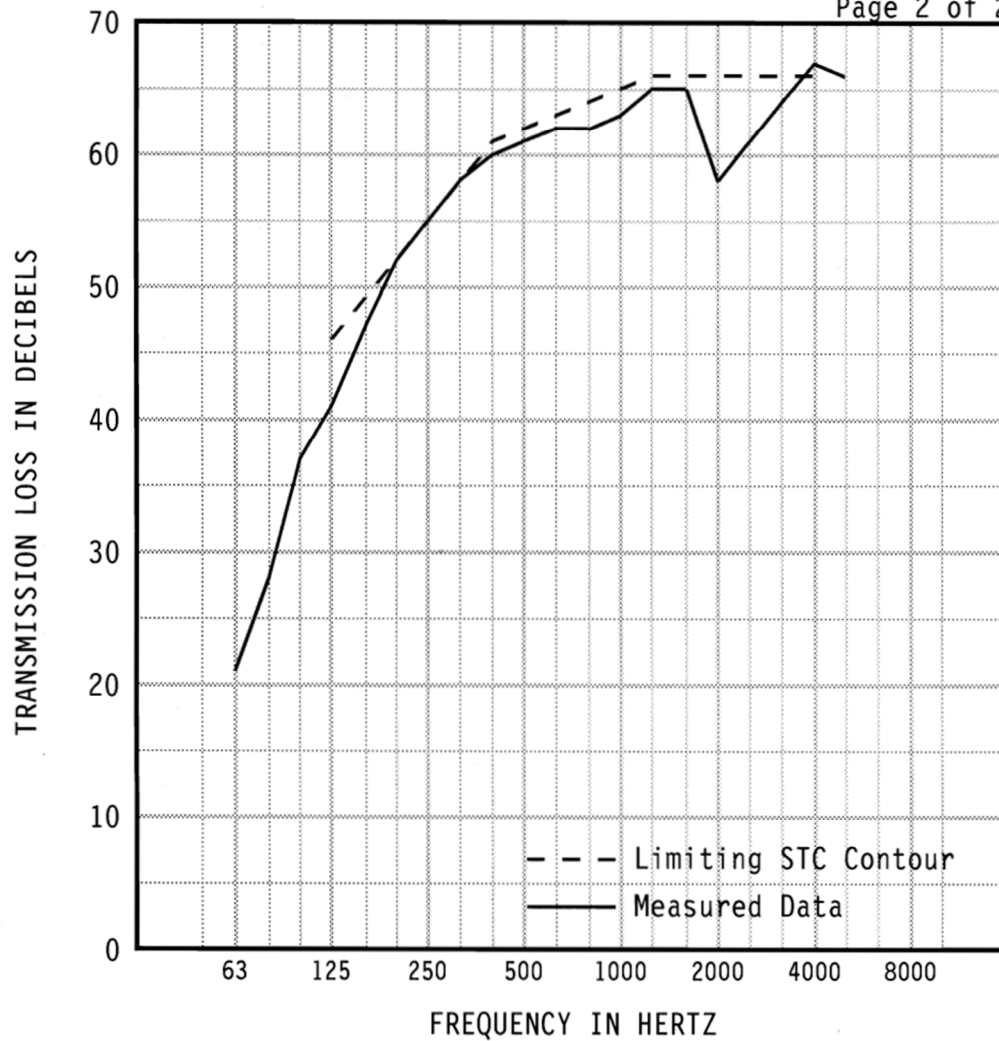
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1/3 OCT BND CNTR	FREQ	63	80	100	125	160	200	250	315	400	500
TL in dB		21	28	37	41	47	*52	*55	*58	*60	*61
95% Confidence in dB deficiencies		1.42	1.92	2.07	1.47	0.89	0.76	0.80	0.52	0.36	0.38
					(5)	(2)	(0)	(0)	(0)	(1)	(1)
1/3 OCT BND CNTR	FREQ	630	800	1000	1250	1600	2000	2500	3150	4000	5000
TL in dB		62	62	63	65	65	58	61	64	67	66
95% Confidence in dB deficiencies		0.29	0.44	0.38	0.39	0.36	0.56	0.55	0.31	0.32	0.50
		(1)	(2)	(2)	(1)	(1)	(8)	(5)	(2)		
EWR	OITC	* Minimum estimate of transmission loss. Measurement limited by filler wall. Actual TL will be equal to or greater than value reported.									STC
63	46	Specimen Area: 64 sq.ft. Temperature: 68.4 deg. F Relative Humidity: 32 % Test Date: 20 February 2013									62 (31)

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