



SOUND TRANSMISSION LOSS TEST REPORT NO. TL18-204

CLIENT: **ClarkDietrich**
9050 Centre Pointe Drive, #400
West Chester, Ohio 45069

19 March 2018

TEST DATE: 2 March 2018

INTRODUCTION

The test was performed in accordance with ASTM E 90-09 (2016), *Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions* and ASTM E2235-04 (2012), *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 single stud wall assembly constructed from 38 mm by 89 mm (1-1/2 inch by 3-1/2 inch) wood studs, Johns Manville R-19 unfaced fiberglass insulation in the stud cavities, ClarkDietrich Acoustical Clips with 22 mm (7/8 inch) ClarkDietrich 25-gauge hat channel, and USG Sheetrock® Brand Firecode® Type 'X' gypsum board.

TEST CONFIGURATION

Source Room Layers	Source Room Resilient Clip	Stud Configuration	Receiving Room Layers
1 layer 16 mm (5/8 inch) USG Sheetrock® Brand Firecode® Type 'X' gypsum board	ClarkDietrich Acoustical Clips with 22 mm (7/8 inch) ClarkDietrich 25-gauge hat channel	38 mm by 89 mm (1-1/2 inch by 3-1/2 inch) wood studs with Johns Manville R-19 unfaced fiberglass insulation	2 layers 16 mm (5/8 inch) USG Sheetrock® Brand Firecode® Type 'X' gypsum board

- The 38 mm by 89 mm (1-1/2 inch by 3-1/2 inch) wood studs were spaced 406 mm (16 inches) on center (O.C.). Johns Manville R-19 unfaced fiberglass insulation was installed in the stud cavities. The frame was isolated from the test opening with 6 mm (1/4 inch) neoprene pads.
- On the source side, ClarkDietrich Acoustical Clips were screwed to the studs using 64 mm (2-1/2 inch) #8 screws. The clips were installed 152 mm (6 inches) from the top and bottom of the wall with a maximum spacing of 1219 mm (48 inches) O.C. laterally and a maximum spacing of 610 mm (24 inches) vertically.
- On the source side, 22 mm (7/8 inch) ClarkDietrich 25-gauge hat channel was installed into the sound isolation clips.
- On the source side, one layer of 16 mm (5/8 inch) USG Sheetrock® Brand Firecode® Type 'X' gypsum board was screwed to the hat channel using 32 mm (1-1/4 inch) long #6 drywall screws spaced at 203 mm (8 inches) O.C. along the channel.
- On the receiving side, two layers of 16 mm (5/8 inch) USG Sheetrock® Brand Firecode® Type 'X' gypsum board were screwed to the studs. The first layer was installed vertically and screwed using 48 mm (1-7/8 inch) long #6 drywall screws spaced at 356 mm (14 inches) O.C. along the perimeter and in the field. The second layer was installed horizontally and screwed using 60 mm (2-3/8 inch) long #8 drywall screws spaced 178 mm (7 inches) O.C. along the perimeter and in the field.
- All the gypsum board joints were staggered on opposite sides. All the gypsum board joints were sealed with a bead of latex caulking and metal foil tape. All screw heads were covered with metal foil tape.

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- On both sides around the perimeter of the assembly, a 6 mm (1/4 inch) gap was maintained and sealed with a bead of latex caulking and 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 178 mm (7 inches) thick.
The overall weight of the assembly was estimated to be 240 kg (530 lbs.) for a calculated surface density of 40.4 kg/m² (8.3 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-42. The Sound Transmission Class rating determined in accordance with ASTM E 413-10 was STC-57.

Approved:

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

Respectfully submitted,
Western Electro-Acoustic Laboratory

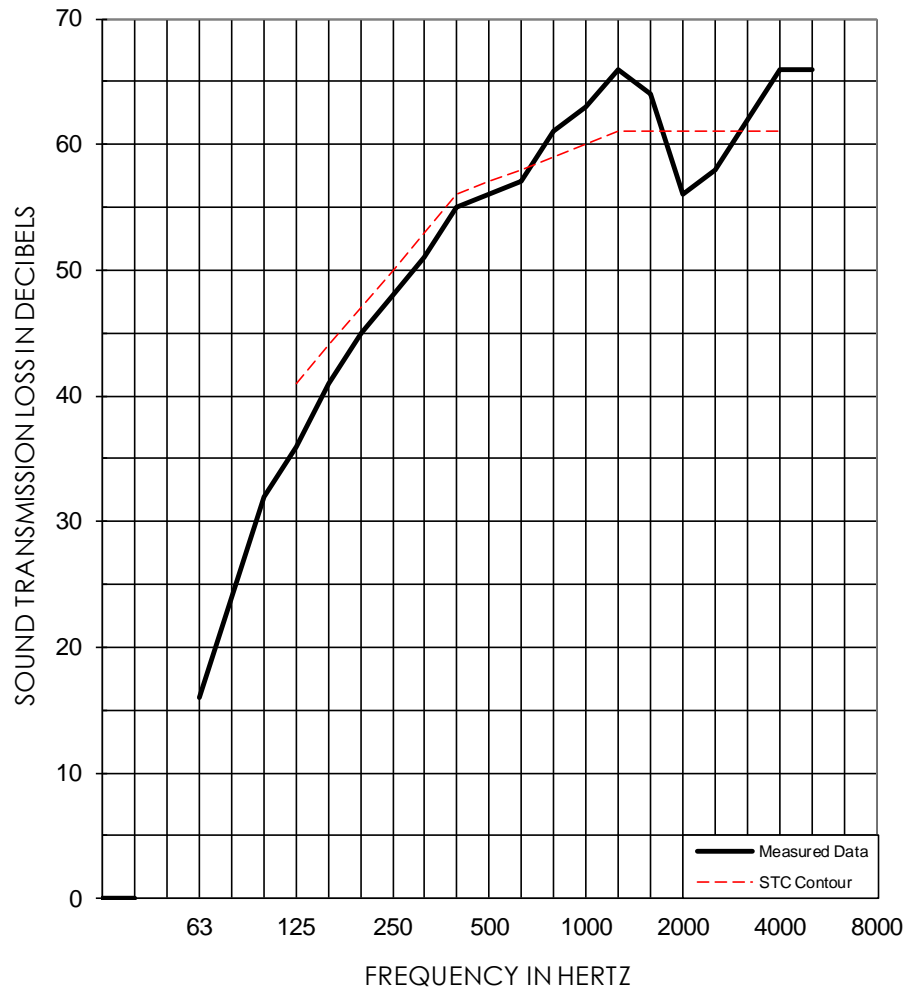
Signature of Chris Kezon
Chris Kezon
Acoustical Test Engineer



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1/3 OCT BAND CNTR FREQ	63	80	100	125	160	200	250	315	400	500
TL in dB	16	24	32	36	41	45	48	51	55	56
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)	(3)	(2)	(2)	(2)	(1)	(1)
1/3 OCT BAND CNTR FREQ	630	800	1000	1250	1600	2000	2500	3150	4000	5000
TL in dB	57	61	63	66	64	56	58	62	66	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)					(5)	(3)			

EWR	OITC	Test Date: 02 March 2018	STC
57	42	Specimen Area: 64 sq.ft.	57
		Temperature: 66.7 deg. F	(25)
		Relative Humidity: 52 %	

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PHOTOGRAPHS OF TEST SPECIMEN

