



SOUND TRANSMISSION LOSS TEST REPORT NO. TL20-402

CLIENT: **Hilti**
 P.O. Box 21148
 Tulsa, Oklahoma 74121

TEST DATE: 22 July 2020

17 August 2020

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 (2020), *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 consisted of a double steel stud wall assembly with Type 'X' gypsum board installed on both sides of the panel, batt insulation in the stud cavity, and Hilti CS-S SA LIGHT Smoke and Acoustic sealant at the head-of-wall joint.

TEST CONFIGURATION

Source Room Layers	Source Framing	Air Gap	Receiving Framing	Receiving Room Layers
1 layer 16 mm (5/8 inch) Type 'X' gypsum board	92 mm (3-5/8 inch) 25-gauge steel studs and 20-gauge slotted slip track spaced 610 mm (24 inches) on center with R-13 batt insulation in the cavity and Hilti CS-S SA LIGHT Smoke and Acoustic sealant at the 13 mm (1/2 inch) head-of-wall joint	25 mm (1 inch)	92 mm (3-5/8 inch) 25-gauge steel studs and 20-gauge slotted slip track spaced 610 mm (24 inches) on center with R-13 batt insulation in the cavity and Hilti CS-S SA LIGHT Smoke and Acoustic sealant at the 13 mm (1/2 inch) head-of-wall joint	1 layer 16 mm (5/8 inch) Type 'X' gypsum board

- On both sides, the 92 mm (3-5/8 inch) 25-gauge steel studs were spaced 610 mm (24 inches) on center (O.C.) and were screwed to the 20-gauge slotted slip track with 12 mm (1/2 inch) truss screws. Unfaced R-13 fiberglass insulation was installed in the stud cavities. The frames were isolated from the test opening with 6 mm (1/4 inch) neoprene pads.
- On both sides, one layer of 16 mm (5/8 inch) Type 'X' gypsum board was screwed to the studs using 32 mm (1-1/4 inch) long #6 drywall screws spaced at 203 mm (8 inches) O.C. at the perimeter and 305 mm (12 inches) in the field.
- On both sides, a gap at the head-of-wall joint was left. The gap size was 13 mm (1/2 inch) and was sealed with Hilti CS-S SA LIGHT Smoke and Acoustic sealant.
- All gypsum board was oriented vertically with joints staggered on opposite sides. Aside from the head-of-wall joint, the remaining gypsum board joints were sealed with a bead of latex 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 241 mm (9-1/2 inches) thick.



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- The overall weight of the assembly was estimated to be 161.2 kg (355.5 lbs.) for a calculated surface density of 27.1 kg/m² (5.6 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 47. The Sound Transmission Class rating determined in accordance with ASTM E 413-10 was STC 64.

Approved:

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

Respectfully submitted,
Western Electro-Acoustic Laboratory

Raul Martinez
Acoustical Test Technician



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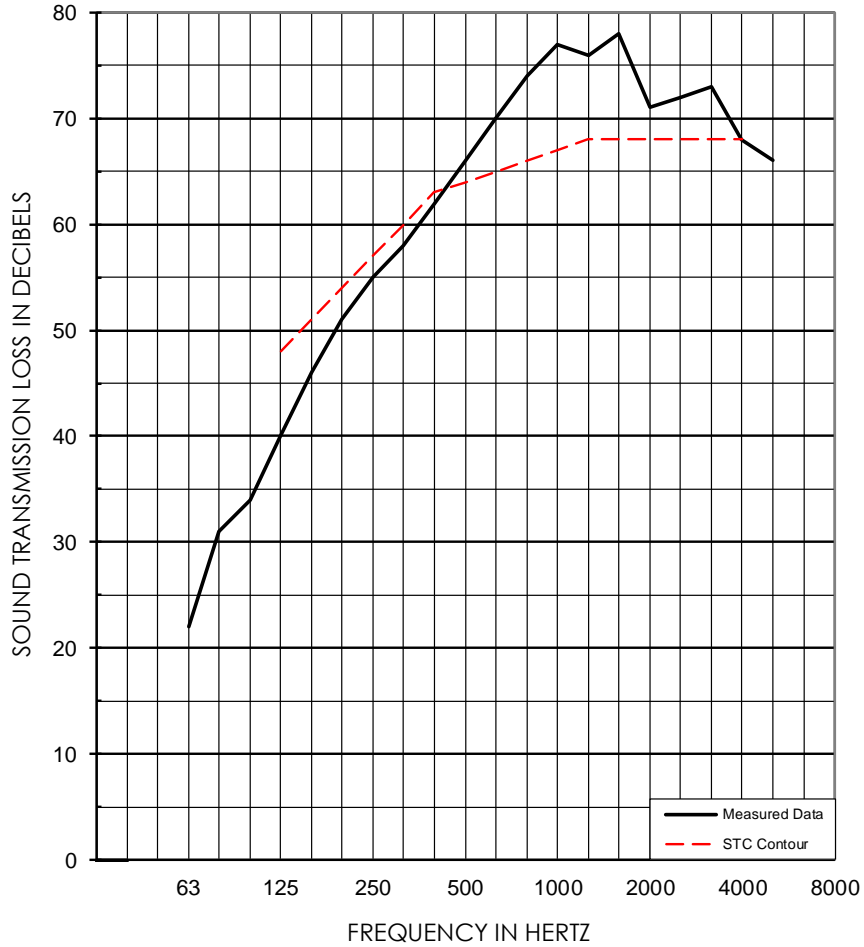
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1/3 OCT BAND CNTR FREQ	63	80	100	125	160	200	250	315	400	500
TL in dB	22	31	34	40	46	51*	55*	58*	62*	66*
95% Confidence in dB deficiencies	1.42	1.92	2.07	1.47	0.89	0.76	0.80	0.52	0.36	0.38
				(8)	(5)	(3)	(2)	(2)	(1)	
1/3 OCT BAND CNTR FREQ	630	800	1000	1250	1600	2000	2500	3150	4000	5000
TL in dB	70*	74*	77*	76*	78*	71*	72*	73*	68	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
									(0)	
EWR	OITC	* Minimum estimate of transmission loss. Measurement limited by filler wall. Actual TL will be equal or greater than value reported.								STC
64	47	Test Date: 22 July 2020 Specimen Area: 64 sq.ft. Temperature: 79.2 deg. F Relative Humidity: 42 %								64 (21)



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PHOTO(S) OF TEST SPECIMEN

