



SOUND TRANSMISSION LOSS TEST REPORT NO. TL22-220

CLIENT: **Hilti**
7250 Dallas Parkway, Suite 1000
Plano, Texas 75024

7 December 2022

TEST DATE: 14 November 2022

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 U.S. government.

DESCRIPTION OF TEST SPECIMEN

The test specimen was a double steel stud wall assembly with type 'x' gypsum board and R-13 fiberglass batt insulation and Hilti CFS-BTS bottom track seal.

Specimen Make-up (Source to Receive)	
Layer 1	16 mm (5/8 inch) type 'x' gypsum board
Layer 2	16 mm (5/8 inch) type 'x' gypsum board
Framing and Insulation	64 mm (2-1/2 inch) 33mil steel studs spaced 610 mm (24 inches) on center (o.c.) with R-13 fiberglass batt insulation in the cavity
Air Space	25 mm (1 inch)
Framing and Insulation	64 mm (2-1/2 inch) 33mil steel studs spaced 610 mm (24 inches) on center (o.c.) with R-13 fiberglass batt insulation in the cavity
Layer 3	16 mm (5/8 inch) type 'x' gypsum board
Layer 4	16 mm (5/8 inch) type 'x' gypsum board
Installation Information	
Layer Installation	Layers 1 and 4: 41 mm (1-5/8 inch) long #6 drywall screws spaced 203 mm (8 inches) o.c. at the perimeter and 305 mm (12 inches) o.c. in the field Layers 2 and 3: 32 mm (1-1/4 inch) long #6 drywall screws spaced 203 mm (8 inches) o.c. at the perimeter and 305 mm (12 inches) o.c. in the field - All gypsum board was oriented vertically with joints staggered on opposite sides of the wall - All joints and perimeters were sealed with a bead of caulking and metal foil tape
Framing and Insulation Installation	- Studs were spaced 610 mm (24 inches) o.c. - Studs were secured to the track using 51 mm (1/2 inch) pan-head truss screws. - The frame was isolated from the test chamber opening via neoprene pucks. - Full cavity R-13 fiberglass insulation was installed in the stud cavities.
Other	- A 16 mm (5/8 inch) gap was left at the bottom joint on both sides of the wall assembly and was filled with the Hilti CFS-BTS bottom track seal. - On both sides, the joint was filled with the 32 mm (1-1/4 inch) thick product. - The product was installed per manufacturer's instructions by adhering the product to the stud track and compressing the gypsum board against the top, outer portion.



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- The overall dimensions of the specimen were 2.44 m (96 inches) wide by 2.44 m (96 inches) high by 216 mm (8-1/2 inches) thick.
- The overall weight of the assembly was estimated to be 283.2 kg (624 lbs) for a calculated surface density of 47.6 kg/m² (9.76 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. Please note the 95% confidence intervals presented in the transmission loss plot refers to the spatial uniformity and sampling uncertainties of the measurement system only. It does not represent the overall repeatability or reproducibility of the test method as defined in Section 13 of ASTM E 90-09 (2016).

The Outdoor-Indoor Transmission Class rating determined in accordance with ASTM E 1332-10a was OITC-50. The Sound Transmission Class rating determined in accordance with ASTM E 413-10 was STC-63.

Respectfully submitted,

Approved:

Western Electro-Acoustic Laboratory

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

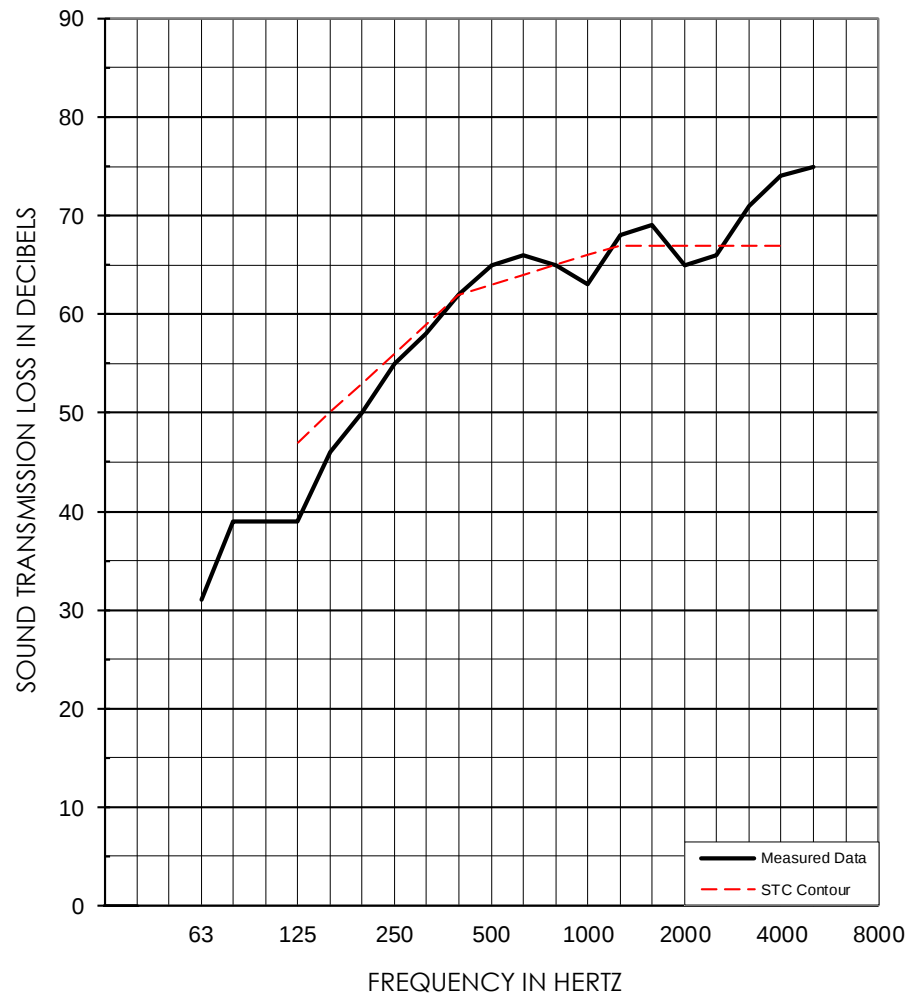
Chris Kezon
Quality Manager



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1/3 OCT BAND CNTR FREQ	63	80	100	125	160	200	250	315	400	500
TL in dB	31*	39*	39	39	46	50	55	58*	62*	65*
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)	(4)	(3)	(1)	(1)	(0)	
1/3 OCT BAND CNTR FREQ	630	800	1000	1250	1600	2000	2500	3150	4000	5000
TL in dB	66	65	63	68	69	65	66	71	74	75
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)	(3)			(2)	(1)			
EWR	OITC	Test Date: 14 November 2022								STC
63	50	Specimen Area: 64 sq.ft.								63
		Temperature: 72.3 deg. F								(23)
		Relative Humidity: 33 %								

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

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PHOTO OF TEST SPECIMEN

