



SOUND TRANSMISSION LOSS TEST REPORT NO. TL18-290

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

25 June 2018

TEST DATE: 16 June 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, Owens Corning R-19 unfaced fiberglass batt 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 |
|--|---|--|--|
| 2 layers 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 Owens Corning R-19 unfaced fiberglass batt 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.). Owens Corning R-19 unfaced fiberglass batt 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 76 mm (3 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, two layers of 16 mm (5/8 inch) USG Sheetrock® Brand Firecode® Type 'X' gypsum board were screwed to the hat channel. The first layer was screwed using 25 mm (1 inch) long #6 drywall screws spaced 305 mm (12 inches) O.C. along the channel. The second layer was screwed using 41 mm (1-5/8 inch) long #6 drywall screws spaced 406 mm (16 inches) O.C. along the channel. The first layer of gypsum board was oriented horizontally. The second layer of gypsum board was oriented vertically.





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- 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 screwed using 32 mm (1-1/4 inch) long #6 drywall screws spaced 305 mm (12 inches) O.C. along the perimeter and in the field. The second layer was screwed using 57 mm (2-1/4 inch) long #6 drywall screws spaced 305 mm (12 inches) O.C. along the perimeter and in the field with joints offset 305 mm (12 inches). The gypsum board was oriented vertically.
All 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.
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 194 mm (7-5/8 inches) thick.
The overall weight of the assembly was estimated to be 307 kg (676 lbs.) for a calculated surface density of 51.6 kg/m² (10.6 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-51. The Sound Transmission Class rating determined in accordance with ASTM E 413-10 was STC-62.

Approved:

Respectfully submitted,
Western Electro-Acoustic Laboratory

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

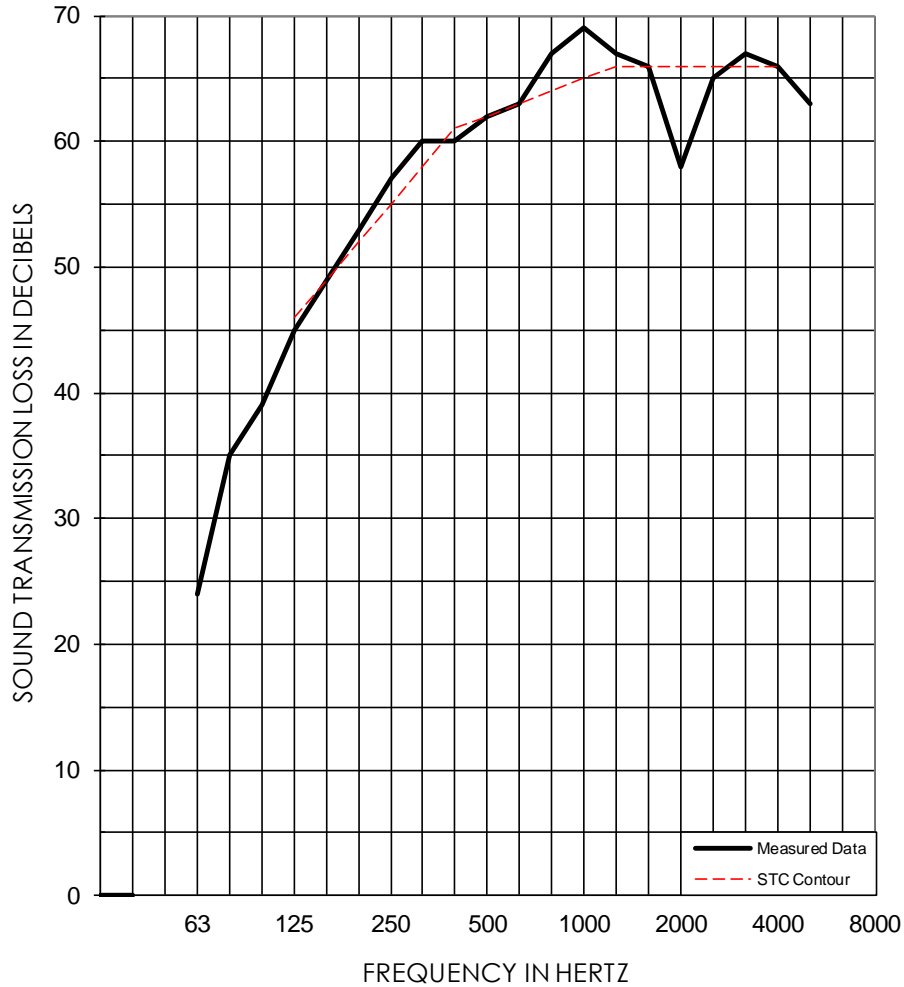
Signature of Raul Martinez
Raul Martinez
Acoustical Test Technician



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| | | | | | | | | | | |
|-----------------------------------|-------------|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 1/3 OCT BAND CNTR FREQ | 63 | 80 | 100 | 125 | 160 | 200 | 250 | 315 | 400 | 500 |
| TL in dB | 24 | 35* | 39 | 45* | 49* | 53* | 57* | 60* | 60* | 62* |
| 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 |
| | | | | (1) | (0) | | | | (1) | (0) |
| 1/3 OCT BAND CNTR FREQ | 630 | 800 | 1000 | 1250 | 1600 | 2000 | 2500 | 3150 | 4000 | 5000 |
| TL in dB | 63* | 67* | 69* | 67 | 66 | 58 | 65 | 67 | 66 | 63 |
| 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) | | | | (0) | (8) | (1) | | (0) | |
| EWR | OITC | Test Date: 16 June 2018 Specimen Area: 64 sq.ft. Temperature: 75.9 deg. F Relative Humidity: 40 % | | | | | | | | STC |
| 64 | 51 | | | | | | | | | 62 (11) |

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

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