

June 30, 2018

ClarkDietrich

9050 Centre Point Drive, Suite 400
West Chester, Ohio 45069

Attention: Mr. Adam Shoemaker

Subject: **ClarkDietrich 18 MIL and 19 MIL Studs**
Acoustical Evaluation
VA Project Number 5123-017

Dear Adam:

This letter presents Veneklasen Associates, Inc. (VA) review of the STC rating changes when the ClarkDietrich 18 MIL studs would be used in place of the ClarkDietrich 19 MIL studs. These tests include single stud construction assemblies that would utilize these stud types. VA reviewed the following test reports:

Test WEAL TL13-187 (STC 45).

Test WEAL TL13-188 (STC 44).

Test WEAL TL13-189 (STC 41).

Test WEAL TL13-190 (STC 38).

Test WEAL TL13-191 (STC 48).

Test WEAL TL13-192 (STC 54).

Test WEAL TL13-193 (STC 59).

In general, test assemblies are installed having 19 MIL studs with single stud construction with gypsum board directly attached. Additionally, tests include single stud walls with the inclusion of a resilient channel on one side of the assembly.

The metal thickness used for 19 MIL studs is typically a specified steel thickness between 0.019 and 0.020 inches. Whereas, 18 MIL studs are typically less metal and approximately 0.0179 inches in thickness.

VA has reviewed the information provided from the tests and the method of measurement. We have also reviewed the specifications of the steel studs. VA has completed computer modeling of the stud performance. In comparing the specifications of the studs used in these tests (19 MIL) to the 18 MIL proposed models, we have found that the acoustical properties of the tested walls to be equal or slightly better with the 18 MIL configuration. *In our professional opinion, if the referenced tests were completed with the ClarkDietrich 18 MIL studs, the acoustical results would be substantially similar meaning that there would be no noticeable difference in acoustical performance.*

If you have any questions or comments, please do not hesitate to call.

Sincerely,
Veneklasen Associates, Inc.



John LoVerde, FASA
Principal

**SOUND TRANSMISSION LOSS TEST REPORT NO. TL13-191**

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

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25 February 2013

TEST DATE: 22 February 2013

INTRODUCTION

The methods and procedures used for each test conform to the provisions and requirements of 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

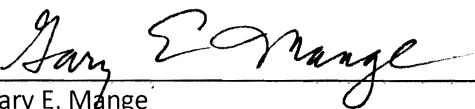
The test specimen was a wall assembly constructed from metal studs, resilient channels, and Type X gypsum board. The metal studs were 92 mm (3-5/8 inch) ClarkDietrich™ Building Systems ProSTUD 19 mil (20 GA equivalent) and were spaced at 610 mm (24 inches) O.C. The head and sill tracks were also 92 mm (3-5/8 inch) ClarkDietrich ProSTUD 19 mil (20 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, one layer 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 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. One layer 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. All gypsum board was oriented vertically and the joints were staggered on opposite sides of the wall. 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 137 mm (5-3/8 inches) thick. The overall weight of the assembly was estimated to be 151 kg (332 lbs) for a calculated surface density of 25.4 kg/m² (5.20 lbs./ft²).

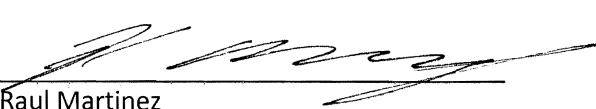
RESULTS OF THE MEASUREMENTS

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-31. The Sound Transmission Class rating determined in accordance with ASTM E 413-10 was STC-48.

Approved:

Respectfully submitted,
Western Electro-Acoustic Laboratory


Gary E. Mange
Laboratory Director


Raul Martinez
Acoustical Test Technician

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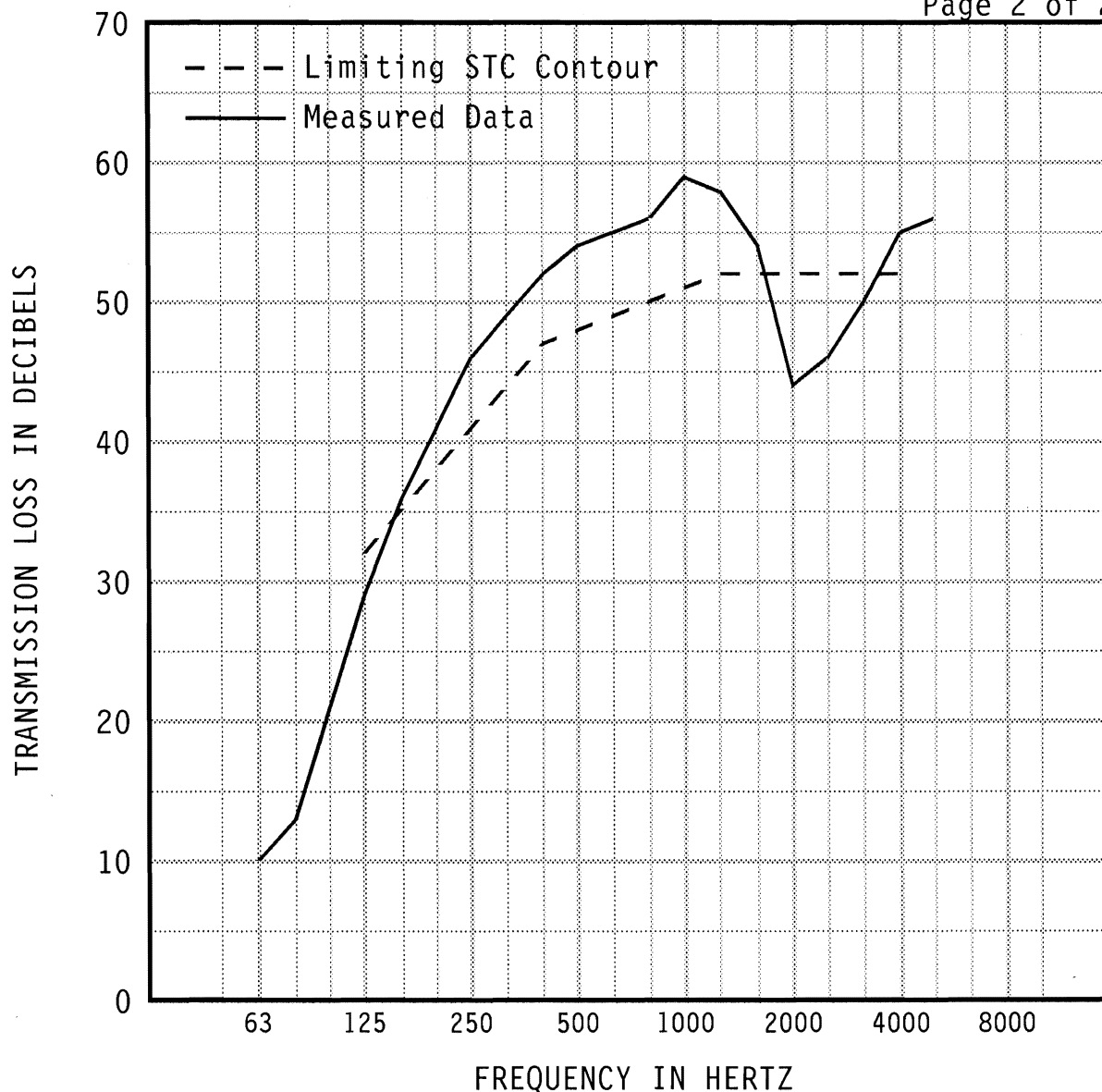


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1/3 OCT BND CNTR FREQ	63	80	100	125	160	200	250	315	400	500
TL in dB	10	13	21	29	36	41	46	49	52	54
95% Confidence in dB deficiencies	1.42	1.92	2.07	1.47 (3)	0.89	0.76	0.80	0.52	0.36	0.38
1/3 OCT BND CNTR FREQ	630	800	1000	1250	1600	2000	2500	3150	4000	5000
TL in dB	55	56	59	58	54	44	46	50	55	56
95% Confidence in dB deficiencies	0.29	0.44	0.38	0.39	0.36	0.56 (8)	0.55 (6)	0.31 (2)	0.32	0.50
EWR	OITC	Specimen Area: 64 sq.ft. Temperature: 69.4 deg. F Relative Humidity: 30 % Test Date: 22 February 2013								STC
52	31									48 (19)

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