



Acoustical Surfaces, Inc.

SOUNDPROOFING, ACOUSTICS, NOISE & VIBRATION CONTROL SPECIALISTS

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We Identify and S.T.O.P. Your Noise Problem

RIVERBANK ACOUSTICAL LABORATORIES

1512 S. BATAVIA AVENUE
GENEVA, ILLINOIS 60134

Alion Science and Technology

630/232-0104
FOUNDED 1918 BY
WALLACE CLEMENT SABINE

TEST REPORT

FOR: Rendered by Manufacturer and Released to:
Acoustical Surfaces, Inc.
123 Columbia Court North
Chaska, MN 55318

Sound Transmission Loss Test
RAL™-TL06-334

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ON: System (4) 3-5/8" Steel Studs, 24" oc, 3.5" Fiberglass,
One Side 5/8" Gold Bond® BRAND Fire-Shield®
Gypsum Board, Other Side 5/8" Gold Bond®
BRAND SoundBreak™ Gypsum Board and 5/8" Gold
Bond® BRAND Fire-Shield® Gypsum Board

CONDUCTED: 27 September 2006

REVISION: 11 June 2007

TEST METHOD

Unless otherwise designated, the measurements reported below were made with all facilities and procedures in explicit conformity with the ASTM Designations E90-04 and E413-04, as well as other pertinent standards. Riverbank Acoustical Laboratories has been accredited by the U.S. Department of Commerce, National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP) for this test procedure (NVLAP Lab Code: 100227-0). A description of the measuring technique is available separately.

DESCRIPTION OF THE SPECIMEN

The test specimen was designated by the client as System (4) 3-5/8" steel studs, 24" oc, 3.5" fiberglass, one side 5/8" Gold Bond® BRAND Fire-Shield® Gypsum Board, other side 5/8" Gold Bond® BRAND SoundBreak™ Gypsum Board and 5/8" Gold Bond® BRAND Fire-Shield® Gypsum Board. The overall dimensions of the specimen as measured were 4.27 m (168 in.) wide by 2.74 m (108 in.) high and 138 mm (5.4 in.) thick. The specimen was installed by the manufacturer directly into the laboratory's 2.74 m (9 ft) by 4.27 m (14 ft) wood-lined steel frame and was sealed on the periphery (both sides) with a dense mastic.

The description of the specimen was as follows: The wall consisted of 3-5/8" steel studs with R-11 fiberglass batt insulation. One side of the wall was covered with 5/8" Fire-Shield® Type X Gypsum Board. The other side of the wall was covered with a base layer of 5/8" SoundBreak™ Gypsum Board and a face layer of 5/8" Fire-Shield® Type X Gypsum Board. A more detailed description of the wall assembly appears in the sections below.

Floor and Ceiling Runners: The two 92 mm (3.625 in.) wide 25 gauge 4.26 m (168 in.) long steel runners were attached to floor and ceiling with 32 mm (1.25 in.) Type S bugle head drywall screws at nominal 610 mm (24 in.) on centers.

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THE RESULTS REPORTED ABOVE APPLY ONLY TO THE SPECIFIC SAMPLE SUBMITTED FOR MEASUREMENT. NO RESPONSIBILITY IS ASSUMED FOR PERFORMANCE OF ANY OTHER SPECIMEN.



NVLAP Lab Code 100227-0

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Studs: The eight (8) 92 mm (3.625 in.) wide 25 gauge 2.73 m (107.5 in.) long steel studs were spaced on 610 mm (24 in.) centers. The studs were friction fit into the top and bottom runners on nominal 610 mm (24 in.) centers.

Insulation: The seven cavities formed by the runners and studs were lined with R-11 fiberglass insulation measuring 89 mm (3.5 in.) thick and 610 mm (24 in.) wide. The total weight of the insulation was 8.6 kg (19 lbs).

Gypsum Wallboard: On the receive side, a single layer of 16 mm (0.625 in.) thick Fire-Shield® Type X Gypsum Board was applied vertically fastened with 25 mm (1 in.) long Type S bugle head drywall screws on 610 mm (24 in.) centers. On the source side, a base layer of 14.3 mm (0.5625 in.) SoundBreak™ Gypsum Board was applied vertically and fastened with 25 mm (1 in.) long Type S bugle head drywall screws on 610 mm (24 in.) centers. A face layer of 16 mm (0.625 in.) thick Fire-Shield® Type X Gypsum Board was applied vertically and fastened with 41 mm (1.625 in.) long Type S bugle head drywall screws on 305 mm (12 in.) centers. Total weight of the Fire-Shield® Type X Gypsum Board as measured was 259 kg (571 lbs.). Total weight of the SoundBreak™ Gypsum Board as measured was 155 kg (341 lbs.). Joints were staggered on opposite sides and covered with duct tape. Screw heads remained exposed.

The weight of the specimen as measured was 439 kg (968 lbs.), an average of 37.5 kg/m² (7.7 lbs/ft²). The transmission area used in the calculations was 11.7 m² (126 ft²). The source and receiving room temperatures at the time of the test were 24±1°C (75±2°F) and 50±1% relative humidity. The source and receive reverberation room volumes were 178 m³ (6,298 ft³) and 177 m³ (6,255 ft³), respectively.

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TEST RESULTS

Sound transmission loss values are tabulated at the eighteen standard frequencies. A graphic presentation of the data and additional information appear on the following pages. The precision of the TL test data is within the limits set by the ASTM Standard E90-04.

<u>FREQ.</u>	<u>T.L.</u>	<u>C.L.</u>	<u>DEF.</u>	<u>FREQ.</u>	<u>T.L.</u>	<u>C.L.</u>	<u>DEF.</u>
100	21	0.87		800	60	0.16	
125	33	0.55	8	1000	61	0.12	
160	39	0.87	5	1250	62	0.13	
200	44	0.49	3	1600	62	0.13	
250	47	0.65	3	2000	57	0.10	4
315	52	0.34	1	2500	55	0.11	6
400	56	0.25		3150	59	0.07	2
500	58	0.25		4000	62	0.09	
630	60	0.20		5000	64	0.07	

STC=57

ABBREVIATION INDEX

FREQ. = FREQUENCY, HERTZ, (cps)
T.L. = TRANSMISSION LOSS, dB
C.L. = UNCERTAINTY IN dB, FOR A 95% CONFIDENCE LIMIT
DEF. = DEFICIENCIES, dB<STC CONTOUR (SUM OF DEF = 32)
STC = SOUND TRANSMISSION CLASS

Tested by



Dean Victor
Senior Experimentalist

Approved by



David L. Moyer
Laboratory Manager

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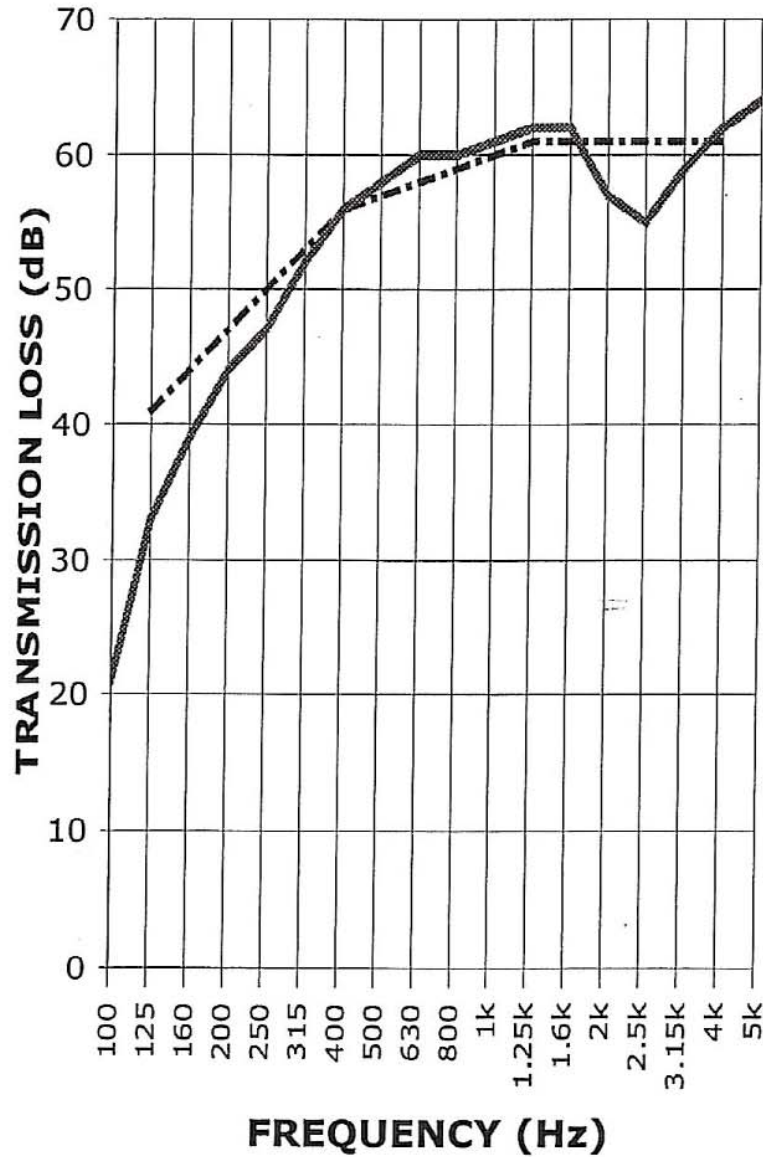
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SOUND TRANSMISSION REPORT
RAL - TL06-334

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STC = 57



TRANSMISSION LOSS
SOUND TRANSMISSION LOSS CONTOUR

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