



Acoustical Surfaces, Inc.

SOUNDPROOFING, ACOUSTICS, NOISE & VIBRATION CONTROL SPECIALISTS

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

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™-TL07-168

ON: System (12) 3-5/8" Steel Studs, 24" on Center, 3.5"
Fiberglass, One Side Double 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

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CONDUCTED: 25 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 (12) 3-5/8" steel studs, 24" on center, 3.5" fiberglass, one side double 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 nominally 4.27 m (168 in.) wide by 2.74 m (108 in.) high and 156 mm (6.125 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-13 fiberglass batt insulation. One side of the wall was covered with a double layer of 5/8" Fire-Shield® 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® 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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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-13 fiberglass insulation measuring 89 mm (3.5 in.) thick and 610 mm (24 in.) wide. The total weight of the insulation was 11.3 kg (25 lbs).

Gypsum Wallboard: On the receive side, a double layer of 16 mm (0.625 in.) thick Fire-Shield® Gypsum Board was applied vertically and fastened with 25 mm (1 in.) long and 41 mm (1.625 in.) long Type S bugle head drywall screws on 610 mm (24 in.) and 305 mm (12 in.) centers respectively. On the source side, a base layer of 16 mm (0.625 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 and a face layer of 16 mm (0.625 in.) thick Fire-Shield® 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® Gypsum Board as measured was 388.5 kg (856.5 lbs.). Total weight of the SoundBreak™ Gypsum Board as measured was 153 kg (338 lbs.). Joints were staggered on opposite sides and each layer. Exposed joints were covered with duct tape. Screw heads remained exposed.

The weight of the specimen as measured was 574 kg (1,265.5 lbs.), an average of 49 kg/m² (10 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 26±2°C (79±2°F) and 52±2% 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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NVLAP Lab Code 100227-0

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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	28	0.62		800	63	0.16	
125	38	0.46	6	1000	64	0.15	
160	41	0.54	6	1250	65	0.15	
200	45	0.59	5	1600	66	0.10	
250	48	0.39	5	2000	63	0.10	1
315	56	0.26		2500	61	0.08	3
400	58	0.35	1	3150	65	0.07	
500	61	0.17		4000	68	0.05	
630	62	0.22		5000	70	0.06	

STC=60

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 = 27)
STC = SOUND TRANSMISSION CLASS

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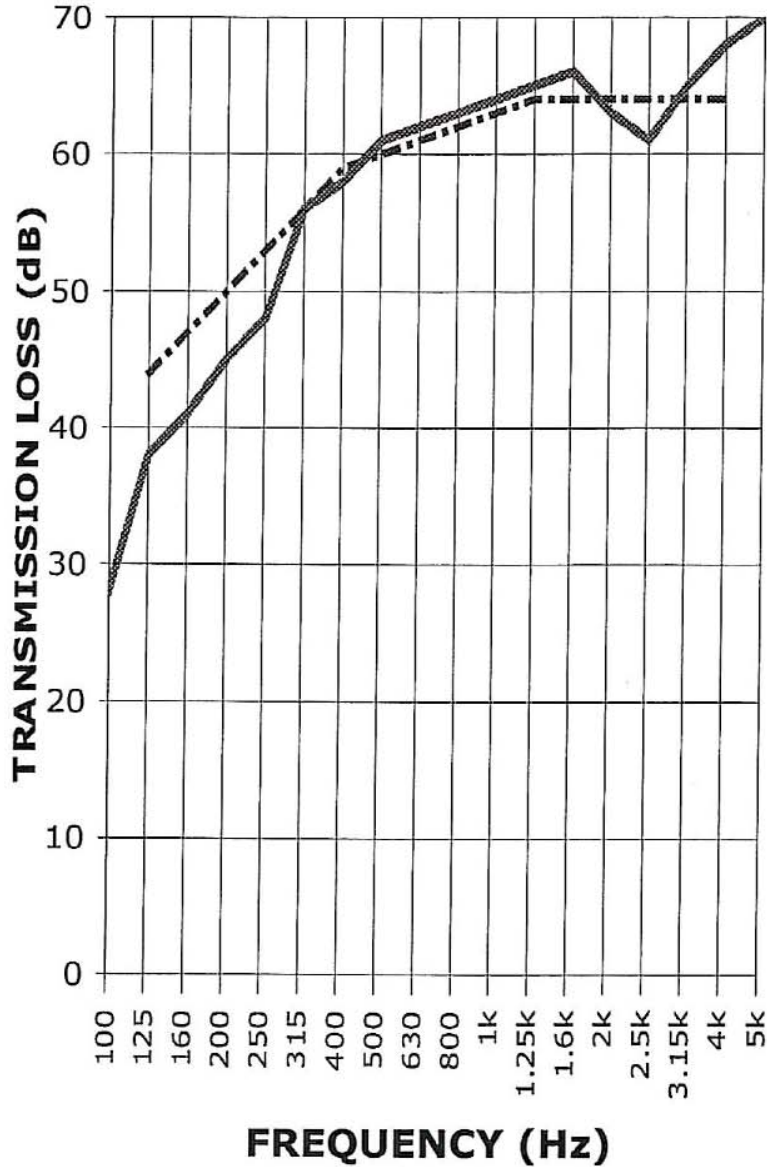
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STC = 60



TRANSMISSION LOSS
SOUND TRANSMISSION LOSS CONTOUR

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