

# RSIC-1 ACOUSTIC ASSEMBLY

## SHAFT WALL ASSEMBLY

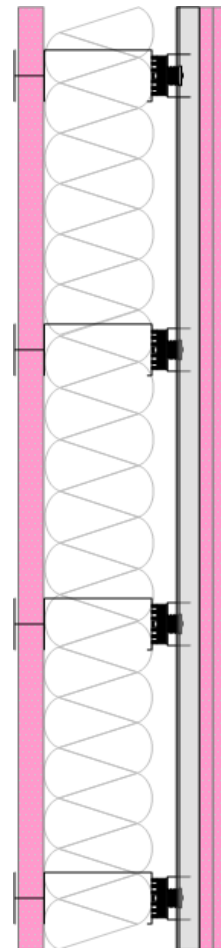


### DIRECT FIX TO STEEL STUD

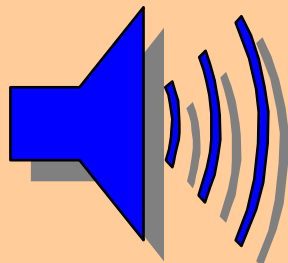
SW4SS STC 60 RAL TL06-184

#### CONSTRUCTION

- \* layer 1" Shaft Liner Gypsum Board
- \* 4" C-H Steel Stud at 24" oc
- \* R-19 Fiberglass Batt Insulation 5.5"
- \* RSIC-1 spaced at 24" oc.
- \* Drywall Furring Channel at 24" oc
- \* 2 layers 5/8" Type "X" Gypsum Board



RAL TL06-184



STC 60

1 and 2 hour fire rating



UL U415

## TEST REPORT

FOR: PAC International, Inc.  
Las Vegas, NV

Sound Transmission Loss Test  
RAL™-TL06-184

ON: SW6SS, Resilient Sound Isolation Clip (RSIC-1) on  
4 Inch C-H Steel Studs 24 Inches on Center, Insulated  
Cavity, Single Layer 1 Inch Shaft Liner Fit in Studs and  
Double Layer 5/8 Inch Type "X" Gypsum Board on  
Clips

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CONDUCTED: 26 May 2006

RESULT: STC 60

### 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 SW6SS, Resilient Sound Isolation Clip (RSIC-1) on 4 inch C-H steel studs 24 inches on center, insulated cavity, single layer 1 inch shaft liner fit in studs and double layer 5/8 inch Type "X" gypsum board on clips. The overall dimensions of the specimen as measured were 4.27 m (168 in.) wide by 2.74 m (108 in.) high and 175 mm (6.875 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 specimen description as provided by the client was as follows: Shaft Wall Assembly direct fix to steel stud; SW6SS construction – Layer 1" Shaft Liner Gypsum Board; 6" C-H Steel Stud at 24" oc; R-19 fiberglass batt insulation 5.5"; RSIC-1 spaced at 24" oc; Drywall furring channel at 24" oc; 2 layers 5/8" USG 'Firecode C' Type "X" gypsum board. A visual inspection verified the manufacturer's description of the specimen. A more complete description follows below.

C-H Steel Stud and Floor and Ceiling Runners: The two 20 gauge 102 mm (4 in.) wide by 4.27 m (168 in.) long metal J-runners were attached to the base and top of the test frame with 16 mm (1.25 in.) Type S bugle head drywall screws at 610 mm (24 in.) on centers. The six (6) 20 gauge metal C-H combined "C" and "H" shaped steel channel that measured 102 mm (4 in.) wide were friction fit with the shaft wall liner into the top and bottom J-runners. Total weight of the

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C-H track and J-runners was 58.5 kg (129 lbs).

### Center Shaft Liner Gypsum Board

The 25 mm (1 in.) thick shaft liner gypsum board panels were held in place by the track and studs. Seven (7) pieces were 2.74 m (107.75 in.) long by 610 mm (24 in.) wide and 25 mm (1 in.) thick. The center shaft liner gypsum board weighed 234.1 kg (516 lbs).

Insulation: The seven cavities formed by the runners and studs were friction fit with R-19 unfaced fiberglass insulation batts measuring 159 mm (6.25 in.) thick and 610 mm (24 in.) wide. Total weight of the insulation material as measured was 13.4 kg (29.5 lbs.).

RSIC-1 Clips and Drywall Channel: On the source side of the wall, PAC International RSIC-1 clips were attached to studs on 610 mm (24 in.) centers vertically and on 1.22 m (48 in.) centers horizontally. The bottom row of clips was installed 76 mm (3 in.) from the bottom of the test frame. Clips in subsequent rows were staggered 610 mm (24 in.) horizontally from adjacent rows. All RSIC-1 clips were attached to studs with a single #8, 41 mm (1.625 in.) long S-12 drywall screw. A total of forty-eight clips were used. The drywall channels were roll-formed furring channels which measured 22 mm (0.875 in.) deep by 65 mm (2.56 in.) wide. Six rows of channels were mounted to the RSIC clips and were overlapped 152 mm (6 in.) and double wire tied with 18 gauge tie wire as necessary.

Gypsum Board: A single layer of 16 mm (0.625 in.) USG 5/8" Firecode 'C' Type X gypsum board was applied horizontally to the studs on the source side of the wall and fastened to the studs with 25 mm (1 in.) long Type S drywall screws on 610 mm (24 in.) centers. An additional layer of 16 mm (0.625 in.) USG 5/8" Firecode 'C' Type X gypsum board was applied vertically and was fastened to the drywall channel with 41 mm (1.625 in.) long Type S drywall screws on 305 mm (12 in.) centers. Total weight of the gypsum board as measured was 288.7 kg (636.5 lbs.). All joints and screw heads were sealed using tape and all purpose joint compound.

The weight of the specimen as measured was 625.3 kg (1,378.5 lbs.), an average of 53.4 kg/m<sup>2</sup> (10.9 lbs/ft<sup>2</sup>). The transmission area used in the calculations was 11.7 m<sup>2</sup> (126 ft<sup>2</sup>). The source and receiving room temperatures at the time of the test were 23±2°C (74±2°F) and 52±2% relative humidity. The source and receive reverberation room volumes were 178 m<sup>3</sup> (6,298 ft<sup>3</sup>) and 177 m<sup>3</sup> (6,255 ft<sup>3</sup>), 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	32	1.04		800	64	0.15	
125	41	0.61	3	1000	64	0.14	
160	47	0.40		1250	61	0.10	3
200	48	0.35	2	1600	59	0.13	5
250	53	0.43		2000	56	0.08	8
315	57	0.24		2500	59	0.11	5
400	60	0.27		3150	66	0.08	
500	63	0.18		4000	73	0.07	
630	63	0.17		5000	75	0.08	

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 = 26)
- STC = SOUND TRANSMISSION CLASS

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Tested by \_\_\_\_\_ Approved by \_\_\_\_\_

Dean Victor David L. Moyer  
Senior Experimentalist Laboratory Manager

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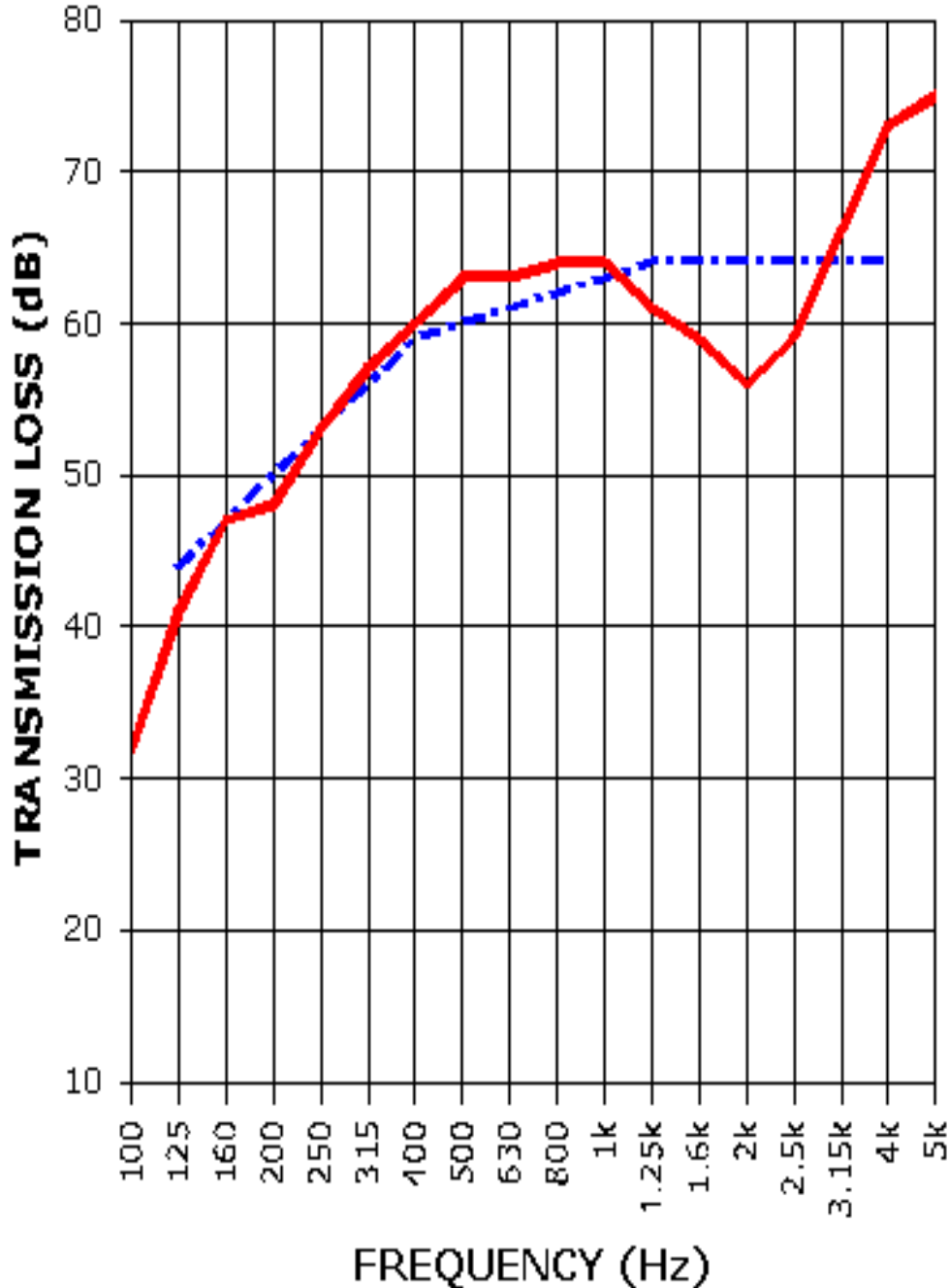
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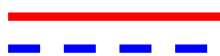
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**TEST REPORT**

**SOUND TRANSMISSION REPORT  
RAL - TL06-184**



STC= 60



TRANSMISSION LOSS  
SOUND TRANSMISSION LOSS CONTOUR

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