RSIC-1 ACOUSTIC ASSEMBLY

PAC INTERNATIONAL Inc.
Toll Free 866-774-2100 • Telephone 503-649-7700

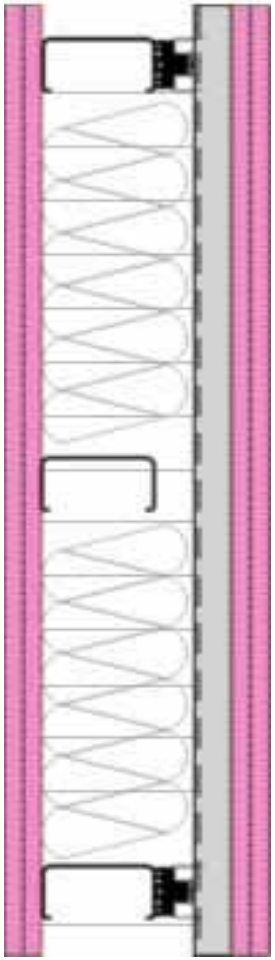
WALL ASSEMBLY

DIRECT FIX TO STEEL STUD

WS SS RAL 05-011 STC 64

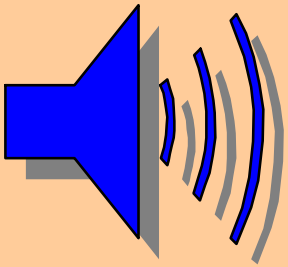
CONSTRUCTION

* 2 layers 5/8"" Gypsum Board
* 3-5/8" Steel Stud at 24" oc
* R-19 Insulation 5.5"
* RSIC-1 48" oc.
* Drywall Furring Channel at 24" oc
* 2 layers 5/8" Gypsum Board



CLASSIFIED C UL US

RAL Test 05-011



STC 64

2 hour fire rating

UL U419, U423

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: PAC International, Inc.
Aloha, OR

Sound Transmission Loss Test
RAL™-TL05-011

ON: WS-SS-FGB-RSIC-1-GB 2 x 2,
Resilient Sound Isolation Clip (RSIC-1) on
Steel Studs 24 Inches on Center, Insulated Cavity,
Double Layer 5/8 Inch Gypsum Board Direct and
Double Layer 5/8 Inch Gypsum Board on Clips

CONDUCTED: 18 January 2005

RESULT: STC 64

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 E413-87, 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. A description of the measuring technique is available separately.

DESCRIPTION OF THE SPECIMEN

The test specimen was designated by the manufacturer as WS-SS-FGB-RSIC-1-GB 2 x 2, Resilient Sound Isolation Clip (RSIC-1) on steel studs 24 inches on center, insulated cavity, double layer 5/8 inch gypsum board direct and double layer 5/8 inch 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 197 mm (7.75 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 test specimen was designated by the client as Wall System – Load bearing steel studs 3.625" x 20 ga. (0.033") x 1.625" flange, fiberglass batt insulation 6", RSIC-1, drywall furring channels 7/8" x 25 ga., gypsum board 5/8" 2 x 2, UL Design U419 & U423, STC – 64. A visual inspection verified the manufacturer's description of the specimen.

The description of the specimen was as follows: The wall consisted of 92 mm (3.625 in.) steel studs with 156 mm (6.25 in.) thick R-19 fiberglass batt insulation and a double layer of 16 mm (0.625 in.) Firecode 'C' Type X gypsum board on the receive side. RSIC-1 clips and drywall channel ("DWC") were used on the source side with a double layer of 16 mm (0.625 in.) Firecode 'C' Type X gypsum board. A more complete description follows.

Floor and Ceiling Runners: The two 20 gauge 92 mm (3.625 in.) wide by 4.27 m (168 in.) long steel 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.

Studs: The eight 92 mm (3.625 in.) wide by 2.74 m (107.75 in.) long 20 gauge load bearing steel studs were spaced on 610 mm (24 in.) centers. The end studs were attached to the frame with 16 mm (1.25 in.) type S bugle head drywall screws. The studs were attached to the floor and ceiling runners on both sides with 13 mm (0.5 in.) long S-12 pan head screws.

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 15 kg (33 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, 64 mm (2.5 in.) long S-12 drywall screw. A total of thirty 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 double layer of 16 mm (0.625 in.) USG 5/8" Firecode 'C' Type X gypsum board was applied vertically to the studs on the receive side of the wall with vertical joints offset. The gypsum board first and second layers were fastened to the studs with 25 mm (1 in.) and 41 mm (1.625 in.) long, respectively, Type S drywall screws on 406 mm (16 in.) centers. A double layer of 16 mm (0.625 in.) USG 5/8" Firecode 'C' Type X gypsum board was applied horizontally to the drywall channel on the source side of the wall with horizontal joints offset. The gypsum board first and second layers were fastened to the drywall channel with 25 mm (1 in.) and 41 mm (1.625 in.) long, respectively, Type S drywall screws on 406 mm (16 in.) centers. Total weight of the gypsum board as measured was 576 kg (1,267 lbs.). All joints and screw heads were sealed using tape and all purpose joint compound.

The weight of the specimen as measured was 665.3 kg (1,466.75 lbs.), an average of 56.8 kg/m^2 (11.6 lbs/ft^2). The transmission area used in the calculations was 11.7 m^2 (126 ft^2). The source and receiving room temperatures at the time of the test were 21±1ºC (70±2ºF) and 57±3% relative humidity. The source and receive reverberation room volumes were 178 m^3 (6,297 ft^3) and 177 m^3 (6,254 ft^3), respectively.

TEST REPORT

PAC International, Inc. RAL™-TL05-011

18 January 2005

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 E90-02.

FREQ.	T.L.	C.L.	DEF.	FREQ.	T.L.	C.L.	DEF.
100	35	0.79		800	67	0.18	
125	43	0.54	5	1000	67	0.18	
160	47	0.64	4	1250	68	0.16	
200	51	0.62	3	1600	67	0.16	1
250	56	0.31	1	2000	62	0.08	6
315	61	0.32		2500	65	0.14	3
400	62	0.25	1	3150	70	0.09	
500	63	0.15	1	4000	73	0.09	
630	65	0.20		5000	76	0.06	

STC=64

ABBREVIATION INDEX

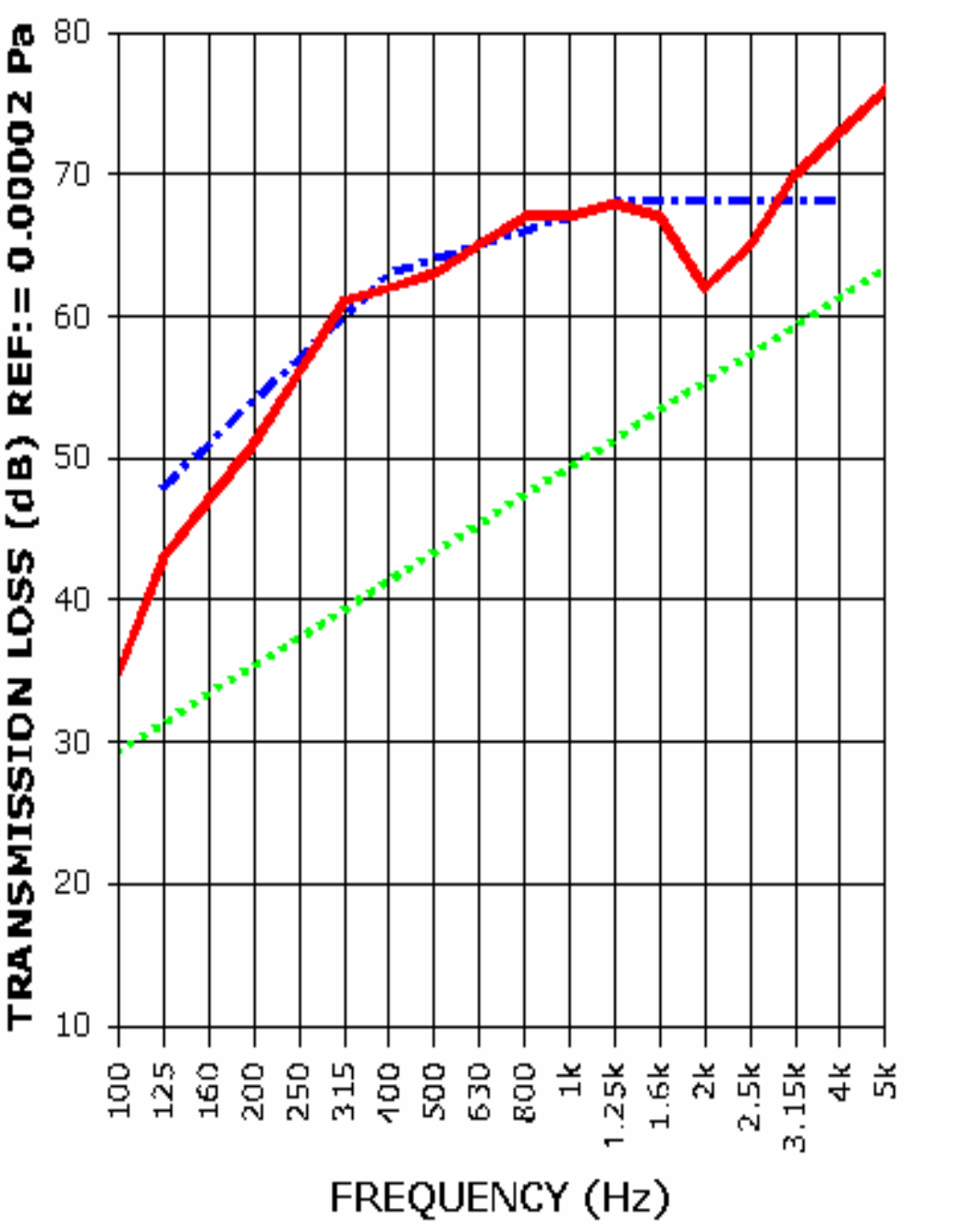
FREQ. = FREQUENCY, HERTZ, (cps)
T.L. = TRANSMISSION LOSS, dB
C.L. = UNCERTAINTY IN dB, FOR A 95% CONFIDENCE LIMIT
DEF. = DEFICIENCIES, dB<STC CONTOUR (SUM OF DEF = 25)
STC = SOUND TRANSMISSION CLASS

Tested by_____ Approved by_____

Marc Sciaky
Senior Technician

David L. Moyer
Laboratory Manager

SOUND TRANSMISSION REPORT
RAL - TL05-011



STC = 64

Riverbank Acoustical
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FOR: PAC International, Inc.
Aloha, OR

ON: WS-SS-FGB-RSIC-1-GB 2 x 2

CONDUCTED: 18 January 2005 (Ref: TL05-011)

SUBJECT: Outdoor Indoor Transmission Class Determination (OITC)

CLASSIFICATION

Unless otherwise designated, the Outdoor Indoor Transmission Class (OITC) determination as reported below was made with explicit conformity to the procedures described in the ASTM E1332-90 test standard. Test Method ASTM E90 was used to obtain the sound transmission loss data. This rating is based on an average transportation noise source spectrum and an A-weighted sound level reduction, either of which may be inappropriate for some applications.

One-third Octave Band Center Frequency, Hz	Reference Sound Spectrum, dB	Test Specimen Transmission Loss, dB
80	103	36
100	102	35
125	101	43
160	98	47
200	97	51
250	95	51
315	94	61
400	93	62
500	93	63
630	91	65
800	90	67
1000	89	67
1250	89	68
1600	88	67
2000	88	62
2500	87	65
3150	85	70
4000	84	73

OITC= 49

Calculated and Submitted by _____

David L. Moyer
Laboratory Manager